FEDERAL REGISTER

VOLUME 11 NUMBER 220

Washington, Saturday, November 9, 1946

Regulations

TITLE 10—ARMY: WAR DEPARTMENT

Chapter VIII—Supplies and Equipment

PART 824—DISPOSITION OF NON-REPAIRABLE PROPERTY

ACCOUNTING FOR PROPERTY ISSUED TO RIFLE CLUBS

In revision of AR 35–6600, § 824.111 (10 CFR, 1944 Supp.) is retained without change, §§ 824.112 to 824.115, inclusive, are revised and § 824.116 is added.

§ 824.112 *Shipments.* (a) When property is shipped to a rifle club or school directly, the depot or arsenal making shipment will prepare in addition to those copies required locally, seven copies of the War Department Shipping Document (WD AGO Form 450–5–C)[1]. External distribution of the form will be as follows:

1 copy to consignee by mail.
1 copy to Finance Officer, Military District of Washington, Attention: Property Auditor.
1 copy to Office of Director of Civilian Marksmanship.
1 copy to Fiscal Division, Office, Chief of Ordnance (to be used for fiscal acounting purposes).
3 copies to consignee with shipment.

Two copies of the form sent to the rifle club or school, appropriately annotated as to discrepancies in shipment (see § 824.114), will be forwarded promptly to the Director of Civilian Marksmanship, Washington, D. C.

(b) The individual authorized to receive and receipt for property on behalf of the rifle club or school will complete the "quantity received" column, and the "articles received" certificate on one of those two copies of the form forwarded to the Director of Civilian Marksmanship. Serial numbers of weapons will be entered on this copy of the shipping document which will be utilized as a voucher to the stock record account by the Office of the Director of Civilian Marksmanship. That office will forward the additional copy to the finance officer charged with responsibility for audit of the shipping depot's property account.

[1] Not filed with the Division of the Federal Register.

§ 824.113 *Return of property.* Upon receipt of notification that a rifle club or school desires to return property to the custody of the Government, a War Department Shipping Document will be prepared in seven copies by the Office of the Director of Civilian Marksmanship. Shipping documents so prepared will be completed in all details except as to quantities to be shipped. Six copies will be forwarded to the rifle club or school and the remaining copy will be retained in suspense. The rifle club or school will enter quantity shipped information and the serial numbers of all weapons on all copies. External distribution of the form by the rifle club or school will be as follows:

1 copy to designate depot or arsenal by mail.
2 copies to depot or arsenal with the shipment.
1 copy to Director of Civilian Markmanship as a notice of shipment and as to a temporary voucher to the stock record account.
1 copy to Finance Officer, Military District of Washington, Attention: Property Auditor.
1 copy retained by rifle club or school.

One of the two copies of the shipping document required by the depot or arsenal will serve as a debit voucher to the depot property account and the other after being receipted will be forwarded to the Office, Director of Civilian Marksmanship, as a credit voucher to the stock record account, superseding the temporary voucher received from the rifle club or school. The temporary voucher, after comparison with the receipted shipping document from the depot, will be forwarded to the finance officer charged with responsibility for audit of the depot's property account.

§ 824.114 *Discrepancies in shipments.* (a) Rifle clubs or schools will verify the contents of all shipments as soon as practicable after receipt. Contents of shipments that have external evidence of tampering, or repackaging in transit will be verified before acknowledging receipt to the carrier. Should the property actually received not agree with the property listed on the shipping document, notation will be made on the shipping document and action will be taken as set forth in this paragraph .

(Continued on p. 13365)

CONTENTS

REGULATIONS AND NOTICES

FEDERAL REGISTER

Published daily, except Sundays, Mondays, and days following legal holidays, by the Division of the Federal Register, the National Archives, pursuant to the authority contained in the Federal Register Act, approved July 26, 1935 (49 Stat. 500, as amended; 44 U.S.C., ch. 8B), under regulations prescribed by the Administrative Committee, approved by the President. Distribution is made only by the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

The regulatory material appearing herein is keyed to the Code of Federal Regulations, which is published, under 50 titles, pursuant to section 11 of the Federal Register Act, as amended June 19, 1937.

The FEDERAL REGISTER will be furnished by mail to subscribers, free of postage, for $1.50 per month or $15.00 per year, payable in advance. The charge for individual copies (minimum 15¢) varies in proportion to the size of the issue. Remit check or money order, made payable to the Superintendent of Documents, directly to the Government Printing Office, Washington 25, D. C.

There are no restrictions on the republication of material appearing in the FEDERAL REGISTER.

CONTENTS—Continued

CONTENTS—Continued

CODIFICATION GUIDE

A numerical list of the parts of the Code of Federal Regulations affected by documents published in this issue. Proposed rules, as opposed to final actions, are identified as such in parentheses.

CODIFICATION GUIDE—Continued

(b) An inconsequential shortage or damage for which liability has not been accepted by the carrier will require an affidavit placed on the shipping document substantially as follows:

I do hereby swear (or affirm) that the items listed below were not received (or were damaged to the extent that they are not in a serviceable condition); that the carrier has not accepted liability for the loss (damage); and the loss (damage) is considered inconsequential in accordance with paragraph 5b, AR 35–6600.

(Authorized representative)

Subscribed and sworn to (or affirmed) before me at_____
this_____day of_____19__.

(Notary public or officer authorized to administer oath)

A listing of the articles short or damaged will follow the affidavit. In no case will a loss or damage greater than $5 in money value be considered inconsequential nor will a loss or damage of less than $5 that represents a large portion of a shipment, considering the value of the shortage as compared to the value of the entire shipment, be considered inconsequential.

(c) If the carrier admits liability for the shortage or damage, the club or school will obtain written admission of liability from the carrier. In such cases the written admission of liability will be forwarded with the receipted shipping documents to the Director of Civilian Marksmanship who will effect reimbursement from the carrier.

(d) If the loss or damage is not inconsequential and the carrier has not admitted liability, the authorized representative of the club or school receiving the shipment will execute sworn affidavits setting forth the circumstances of the loss or damage which will be forwarded with the receipted shipping documents to the Director of Civilian Marksmanship. Upon receipt of the affidavits and such additional information as may be required, the Director of Civilian Marksmanship will initiate and process a Report of Survey—Discrepancies Incident to Shipment (WD AGO Form 15–1) to determine responsibility for the loss or damage. The Commanding General, Military District of Washington, will act on such reports of survey; however, in those cases involving serious shortages or special situations which require the use of a surveying officer, personnel of army areas may be utilized.

(e) The Director of Civilian Marksmanship will take up on his stock record account the property actually received by the rifle club or school as shown by the quantity received column of the shipping document. Shipping documents bearing notations of discrepancies will be supported by an affidavit, admission of carrier liability, or report of survey as provided in paragraphs (b), (c), or (d) of this section.

§ 824.115 *Annual adjustment of property responsibility.* (a) The Director of Civilian Marksmanship will annually prepare for each rifle club or school holding public property under the conditions contemplated in paragraph 1, a consolidated memorandum receipt on which will be listed all public property for which the organization is currently held responsible. A Property Issue Slip (WD AGO Form 446) will be used for this purpose. Serial numbers of weapons will not be shown; however, the rifle club or school involved will be directed to enter that information together with a statement as to any overages or shortages of property on hand disclosed through physical inventory at the time of signature of the document by an appropriate official of the rifle club or school. In entering serial numbers of weapons, each such number will be preceded by the initials of the arsenal or commercial firm manufacturing the particular weapon.

(b) Upon receipt of a new consolidated memorandum receipt the Director of Civilian Marksmanship will, in the absence of discrepancy notations, file the document as a voucher to his stock record account.

(c) If the new consolidated memorandum receipt reveals discrepancies between the amounts and kinds of Government property for which the rifle club or school is held responsible and the amounts and kinds of Government property actually in possession of the organization, the Director of Civilian Marksmanship will take action as follows:

(1) In the event of an overage, the Director of Civilian Marksmanship will assume accountability therefor, utilizing as a voucher to the stock record account, an Inventory Adjustment Report (WD AGO Form 444).[1] No approval of this voucher will be required.

(2) In the event of shortages, the Director of Civilian Marksmanship will take suitable action to secure reimbursement to the United States of the value of the missing articles or to effect adjustment of the discrepancy by a report of survey.

§ 824.116 *Sales of small arms, ammunition.* Sales of ordnance property to individuals or organizations as authorized by Army Regulations will conform to the provisions of §§ 824.111 to 824.116, inclusive. [AR 35–6600, 17 Oct. 1946]

(38 Stat. 370; 43 Stat. 510; 10 U. S. C. 1185; 32 U. S. C. 181)

[SEAL] EDWARD F. WITSELL,
Major General,
The Adjutant General.

[F. R. Doc. 46–20163; Filed, Nov. 8, 1946; 8:45 a. m.]

TITLE 6—AGRICULTURAL CREDIT

Chapter II—Production and Marketing Administration (Commodity Credit)

1947 SUGAR BEET PRICE SUPPORT PROGRAM AND PURCHASE AND PRICE SUPPORT PROGRAMS FOR DOMESTIC OFFSHORE RAW CANE SUGAR

CROSS REFERENCE: For directives from the Office of Economic Stabilization authorizing the Secretary of Agriculture to carry out through the Commodity Credit Corporation a price support program for the 1947 crop of domestic sugar beets and purchase and price support programs for 1947 crop Puerto Rican and Virgin Islands raw cane sugar, see Part 4003 of Title 32, Chapter XVIII, *infra.*

[1] Not filed with the Division of the Federal Register.

PART 277—TOBACCO LOANS

SUBPART—1946 CROP

Set forth below are the rates, by grades, of advances which will be paid to growers of 1946 crop fire-cured and dark air-cured tobacco under the tobacco loan program formulated by Commodity Credit Corporation, published in 11 F. R. 12781.[1]

§ 277.6 *1946 Crop—Virginia fire-cured, type 21, Tobacco Advance Schedule.*[2]

[Dollars per hundred pounds]

Grade	Farm sales weight			Grade	Farm sales weight
	Length 46	Length 45	Length 44		
A1F	38	40		T3F	24
A2F	35	39	36	T4F	21
A3F	32	34	33	T5F	18
A1D	38	40		T3D	24
A2D	35	39	36	T4D	21
A3D	32	34	33	T5D	18
B1F	34	36	35	T3M	20
B2F	32	34	33	T4M	16
B3F	29	31	29	T5M	16
B4F	26	29	28	T3G	20
B5F	22	24	23	T4G	18
B1D	34	36	35	T5G	16
B2D	32	34	33	X1L	25
B3D	29	31	27	X2L	23
B4D	25	27	26	X3L	20
B5D	22	24	23	X4L	18
B3M	26	27	26	X5L	16
B4M	23	25	23	X1F	25
B5M	20	23	20	X2F	23
B3G	26	27	26	X3F	20
B4G	23	25	23	X4F	18
B5G	20	23	20	X5F	16
C1L	34	36	35	X1D	25
C2L	32	34	33	X2D	23
C3L	27	31	29	X3D	20
C4L	24	27	26	X4D	18
C5L	22	24	23	X5D	16
C1F	34	36	35	X3M	18
C2F	32	34	33	X4M	16
C3F	27	31	29	X5M	13
C4F	24	27	26	X3G	18
C5F	22	24	23	X4G	16
C2D	25	27	26	X5G	12
C3D	22	24	22	N1L	11
C4D	21	23	21	N1R	11
C5D	17	19	17	N1G	11
C3M	23	25	23		
C4M	20	23	20		
C5M	18	20	18		
C3G	23	25	23		
C4G	20	23	20		
C5G	18	20	18		

§ 277.7 *1946 Crop—fire-cured, types 22, 23 and 24, Tobacco Advance Schedule.*[3]

[1] Part 275—Tobacco Loans is redesignated Part 277—Tobacco Loans.

[2] Tobacco can be placed under loan only by the original producer and at these rates only if produced on a cooperating farm. Tobacco graded "W" (wet), "U" (unsound), "DAM" (damaged), N2L, N2R, N2G or K will not be accepted.

[3] Tobacco can be placed under loan only by the original producer and at these rates only if produced on a cooperating farm. Tobacco graded "W" (wet), "U" (unsound), "DAM" (damaged), N2L, N2R, N2G or K will not be accepted.

(Dollars per 100 pounds)

Grade	Farm sales weight		Grade	Farm sales weight
	Lengths 46 and 45	Length 44		
A1F	39		T3F	22
A2F	36	33	T4F	21
A3F	33	30	T5F	20
A1D	40		T3D	22
A2D	37	34	T4D	21
A3D	34	31	T5D	20
B1F	36	33	T3M	20
B2F	33	30	T4M	19
B3F	31	28	T5M	18
B4F	26	24	T3G	20
B5F	22	19	T4G	19
B3FV	29	26	T5G	17
B4FV	24	22	X1L	23
B5FV	20	18	X2L	21
B1D	39	36	X3L	20
B2D	35	32	X4L	19
B3D	32	29	X5L	17
B4D	27	24	X1F	23
B5D	22	20	X2F	21
B3M	28	25	X3F	20
B4M	24	21	X4F	19
B5M	20	18	X5F	17
B3G	28	25	X3FV	19
B4G	24	21	X4FV	18
B5G	20	18	X5FV	16
C1L	34	32	X1D	23
C2L	31	29	X2D	21
C3L	26	24	X3D	19
C4L	24	22	X4D	18
C5L	21	19	X5D	15
C1F	34	32	X3M	18
C2F	31	29	X4M	17
C3F	26	24	X5M	14
C4F	24	22	X3G	18
C5F	21	19	X4G	16
C3FV	24	22	X5G	13
C4FV	22	20	N1L	11
C5FV	19	17	N1R	11
C2D	30	28	N1G	11
C3D	25	23		
C4D	23	21		
C5D	20	18		
C3M	24	22		
C4M	22	20		
C5M	19	17		
C3G	22	20		
C4G	20	19		
C5G	19	17		

§ 277.8 *1946 Crop—dark air-cured, types 35 and 36, Tobacco Advance Schedule.*[1]

[Dollars per hundred pounds]

Grade	Farm sales weight		Grade	Farm sales weight
	Lengths 46 and 45	Length 44		
A1F	36		T3F	20
A2F	34	31	T4F	19
A3F	32	29	T5F	17
A1R	36		T3R	20
A2R	34	31	T4R	19
A3R	32	29	T5R	17
B1F	36	32	T3D	20
B2F	33	30	T4D	18
B3F	30	27	T5D	16
B4F	26	24	T3M	19
B5F	22	20	T4M	17
B3FV	28	25	T5M	15
B4FV	24	22	T3G	19
B5FV	20	18	T4G	17
B1R	35	32	T5G	15
B2R	33	30	X1L	23
B3R	30	27	X2L	21
B4R	25	23	X3L	20
B5R	20	18	X4L	19
B3G	26	23	X5L	17
B4G	21	19	X1F	23
B5G	19	17	X2F	21
B1D	35	32	X3F	20
B2D	33	30	X4F	18
B3D	28	25	X5F	16
B4D	22	19	X3FV	19
B5D	19	17	X4FV	17

[1] Tobacco can be placed under loan only by the original producer and at these rates only if produced on a cooperating farm. Tobacco graded "W" (wet), "U" (unsound), "DAM" (damaged), N2L, N2R, N2G or K will not be accepted.

(Dollars per 100 pounds)

Grade	Farm sales weight		Grade	Farm sales weight
	Lengths 46 and 45	Length 44		
B3M	26	23	X5FV	15
B4M	22	19	X1R	23
B5M	19	17	X2R	21
C1L	34	31	X3R	20
C2L	32	29	X4R	18
C3L	28	25	X5R	15
C4L	24	22	X3D	19
C5L	20	18	X4D	17
C1F	33	30	X5D	15
C2F	31	28	X3M	18
C3F	27	24	X4M	18
C4F	23	20	X5M	14
C5F	20	18	X3G	18
C3FV	25	22	X4G	16
C4FV	21	18	X5G	13
C5FV	18	16	N1L	11
C1R	32	29	N1R	11
C2R	30	27	N1G	11
C3R	25	22		
C4R	22	19		
C5R	18	16		
C3M	22	19		
C4M	19	17		
C5M	17	15		
C4G	18	16		
C5G	16	14		

[SEAL] RALPH S. TRIGG,
Acting President,
Commodity Credit Corporation.

[F. R. Doc. 46-20161; Filed, Nov. 8, 1946; 8:45 a. m.]

TITLE 7—AGRICULTURE

Chapter IX—Production and Marketing Administration (Marketing Agreements and Orders)

[Lemon Reg. 201]

PART 953—LEMONS GROWN IN THE STATES OF CALIFORNIA AND ARIZONA

LIMITATION OF SHIPMENTS

§ 953.308 *Lemon Regulation 201*—(a) *Findings.* (1) Pursuant to the marketing agreement and the order (7 CFR, Cum. Supp., 953.1 et seq.), regulating the handling of lemons grown in the State of California or in the State of Arizona, issued under the applicable provisions of the Agricultural Marketing Agreement Act of 1937, as amended, and upon the basis of the recommendation and information submitted by the Lemon Administrative Committee, established under the said marketing agreement and order, and upon other available information, it is hereby found that the limitation of the quantity of such lemons which may be handled, as hereinafter provided, will tend to effectuate the declared policy of the act.

(2) It is hereby further found that compliance with the notice, public rule making procedure, and effective date requirements of the Administrative Procedure Act (Pub. Law 404, 79th Cong., 2d Sess.; 60 Stat. 237) is impracticable and contrary to the public interest in that the time intervening between the date when information upon which the regulation is based became available and the time when this section must become effective in order to effectuate the declared policy of the Agricultural Marketing Agreement Act of 1937, as amended, is insufficient for such compliance.

(b) *Order.* (1) The quantity of lemons grown in the State of California or in the State of Arizona which may be handled during the period beginning at 12:01 a. m., p. s. t., November 10, 1946, and ending at 12:01 a. m., p. s. t., November 17, 1946, is hereby fixed at 235 carloads, or an equivalent quantity.

(2) The prorate base of each handler who has made application therefor, as provided in the said marketing agreement and order, is hereby fixed in accordance with the prorate base schedule which is attached hereto and made a part hereof by this reference. The Lemon Administrative Committee, in accordance with the provisions of the said marketing agreement and order, shall calculate the quantity of lemons which may be handled by each such handler during the period specified in subparagraph (1) of this paragraph.

(3) As used in this section, "handled," "boxes," "handler," "carloads," and "prorate base" shall have the same meaning as is given to each such word in the said marketing agreement and order.

(48 Stat. 31, 670, 675; 49 Stat. 750; 50 Stat. 246; 7 U. S. C. 601 et seq.)

Done at Washington, D. C., this 7th day of November 1946.

[SEAL] S. R. SMITH,
Director, Fruit and Vegetable Branch, Production and Marketing Administration.

PRORATE BASE SCHEDULE

Storage date: November 3, 1946.

[12:01 a. m. Nov. 10, 1946 to 12:01 a. m. Nov. 24, 1946]

Handler	*Prorate base percent*
Total	100.000
Allen-Young Citrus Packing Co	.008
American Fruit Growers, Fullerton	.142
American Fruit Growers, Upland	.198
Consolidated Citrus Growers	.011
Corona Plantation Co	.185
Hazeltine Packing Co	.304
Leppla-Pratt, Produce Distributors, Inc	.585
McKellips, C. H.-Phoenix Citrus Co	.000
McKellips Mutual Citrus Growers, Inc	.183
Phoenix Citrus Packing Co	.048
Ventura Coastal Lemon Co	3.954
Ventura Pacific Co	1.242
Total A. F. G	6.860
Arizona Citrus Growers	.571
Desert Citrus Growers Co., Inc	.151
Mesa Citrus Growers	.685
Elderwood Citrus Association	.171
Klink Citrus Association	.587
Lemon Cove Association	.251
Glendora Lemon Growers Association	1.651
La Verne Lemon Association	.104
La Habra Citrus Association	.563
Yorba Linda Citrus Association, The	.126
Alta Loma Hts. Citrus Association	.434
Etiwanda Citrus Fruit Association	.080
Mountain View Fruit Association	.000
Old Baldy Citrus Association	.474
Upland Lemon Growers Association	2.275
Central Lemon Association	.349
Irvine Citrus Association, The	.357

PRORATE BASE SCHEDULE—Continued

Handler	Prorate base percent
Placentia Mutual Orange Association	.326
Corona Citrus Association	.000
Corona Foothill Lemon Co	.853
Jameson Co	.472
Arlington Heights Fruit Co	.021
College Heights Orange & Lemon Association	3.266
Chula Vista Citrus Association, The	1.039
El Cajon Valley Citrus Association	.216
Escondido Lemon Association	1.903
Fallbrook Citrus Association	.843
Lemon Grove Citrus Association	.318
San Dimas Lemon Association	2.398
Carpinteria Lemon Association	4.434
Carpinteria Mutual Citrus Association	5.986
Goleta Lemon Association	4.639
Johnston Fruit Co	9.846
North Whittier Heights Citrus Association	.238
San Fernando Heights Lemon Association	.805
San Fernando Lemon Association	.189
Sierra Madre-Lamanda Citrus Association	1.000
Sunny Hills Ranch, Inc	.000
Tulare County Lemon & Grapefruit Association	.656
Briggs Lemon Association	1.593
Culbertson Investment Co	2.383
Culbertson Lemon Association	2.669
Fillmore Lemon Association	.518
Oxnard Citrus Association No. 1	4.424
Oxnard Citrus Association No. 2	3.659
Rancho Sespe	.642
Santa Paula Citrus Fruit Association	1.585
Saticoy Lemon Association	5.660
Seaboard Lemon Association	5.896
Somis Lemon Association	.000
Ventura Citrus Association	2.233
Limoneira Co	3.087
Teague-McKevett Association	1.119
East Whittier Citrus Association	.199
Leffingwell Rancho Lemon Association	.003
Murphy Ranch Co	.715
Whittier Citrus Association	.271
Whittier Select Citrus Association	.243
Total C. F. G. E	85.176
Arizona Citrus Products Co	.383
Chula Vista Mutual Lemon Association	1.096
Escondido CoOp. Citrus Association	.233
Glendora CoOp. Citrus Association	.060
Index Mutual Association	.118
La Verne CoOp. Citrus Association	1.841
Libbey Fruit Packing Co	.317
Orange CoOp. Citrus Association	.077
Pioneer Fruit Co	.036
Ventura Co. Orange & Lemon Association	1.762
Whittier Mutual Orange & Lemon Association	.018
Total M. O. D	5.941
Atlas Citrus Packing Co	.000
California Citrus Groves, Inc., Ltd	.128
El Modena Citrus, Inc	.000
Evans Brothers Packing Co., Riverside	.025
Evans Brothers Packing Co., Sentinel Butte Ranch	.428
Harding & Leggett	.583
Orange Belt Fruit Distributors	.713
Potato House, The	.019
Rooke, B. G., Packing Co	.000
San Antonio Orchard Co	.069
Sun Valley Packing Co	.000
Verity, R. H., Sons & Co	.058
Western States Fruit & Produce Co	.000
Total Independents	2.023

[F. R. Doc. 46-20265; Filed, Nov. 8, 1946; 8:45 a. m.]

TITLE 18—CONSERVATION OF POWER

Chapter III—Bonneville Power Administration, Department of the Interior

PART 401—DELEGATIONS OF AUTHORITY

Sec.

401.1 Administrator.
401.2 Assistant Administrator.
401.3 Acting Administrator.
401.4 Controller.
401.5 Chief, Division of Power Sales and Service, Branch of Power Management.
401.6 Assistant General Counsel.
401.7 Chief, Division of Operations and Maintenance, Branch of Engineering and Operations.
401.8 Chief, Procurement Section, Division of Administrative Services.
401.9 Chief, Land Section, Division of Administrative Services.
401.10 Chief, Purchase Unit, Division of Administrative Services.
401.11 General.
401.12 Conflicting delegations.

AUTHORITY: §§ 401.1 to 401.12, inclusive, issued under 50 Stat. 731, as amended, R. S. 161; 16 U. S. C. 832, et seq., 5 U. S. C. 22; E. O. 8526, Aug. 26, 1940; 5 F. R. 3390; Departmental Order 2115, Oct. 16, 1945, 10 F. R. 14211; Departmental Order 2237, Aug. 9, 1946, 11 F. R. 8830.

§ 401.1 *Administrator.* Delegations of authority from the President and the Secretary of the Interior to the Bonneville Power Administrator are listed in § 400.31 of this chapter.

§ 401.2 *Assistant Administrator.* The Assistant Administrator may:

(a) Execute change orders involving increases or decreases in commitments in excess of $500 on contracts originally signed by others than the Assistant Administrator;

(b) Execute contracts with railroad companies and other public utilities for power line crossings;

(c) Accept and execute instruments, other than power sales and interchange contracts, under which the Administration receives or grants rights or privileges;

(d) During the absence of the Administrator, perform the duties and exercise the powers of the Administrator.

§ 401.3 *Acting Administrator.* During the absence of the Administrator and the Assistant Administrator, such officer or employee who is designated as Acting Administrator by the Administrator or the Assistant Administrator, as the case may be, may perform the duties and exercise the powers of the Administrator: *Provided*, That the Acting Administrator may not execute power sales or interchange contracts which deviate from established policies, declarations of taking, or system acquisition contracts.

§ 401.4 *Controller.* The Controller may execute construction and materials contracts involving amounts from $5,000 to $50,000.

§ 401.5 *Chief, Division of Power Sales and Service, Branch of Power Management.* The Chief, Division of Power Sales and Service, Branch of Power Management, may approve purchasers' resale rate schedules and any additions thereto or modifications thereof, pursuant to power contracts providing therefor, such approval to be in writing.

§ 401.6 *Assistant General Counsel.* Any Assistant General Counsel may execute, on behalf of the Bonneville Power Administration, releases of claims and demands of the United States for any losses, injuries, or damages to property under the Administrator's control against other persons or public or private corporations when such claims or demands are paid in full.

§ 401.7 *Chief, Division of Operations and Maintenance, Branch of Engineering and Operations.* The Chief, Division of Operations and Maintenance, Branch of Engineering and Operations, may execute, on behalf of the Bonneville Power Administration, agreements with customers for the operation of their switches installed on premises in the possession of this Administration, and agreements for the operation of switches of the Administration.

§ 401.8 *Chief, Procurement Section, Division of Administrative Services.* The Chief, Procurement Section, Division of Administrative Services, may:

(a) Execute contracts for construction and materials when the amount involved is less than $5,000;

(b) Execute amendments to contracts for construction and materials which the delegatee originally signed:

(c) Execute findings of fact concerning and letters granting extensions of time, or contract amendments carrying out such findings of fact, with respect to contracts which he originally signed.

§ 401.9 *Chief, Land Section, Division of Administrative Services.* The Chief, Land Section, Division of Administrative Services, may:

(a) Negotiate for purchases of all interests in real estate and licenses, and other rights and privileges pertaining to lands and other property necessary for the Administration's program;

(b) Accept options for the purchase of all interests in real estate.

§ 401.10 *Chief, Purchase Unit, Division of Administrative Services.* The Chief, Purchase Unit, Division of Administrative Services, may purchase supplies and services (other than personal) when the amount does not exceed $500.

§ 401.11 *General.* Delegated authority may be exercised by all the superiors of the delegatee, and, during the absence of the delegatee, by the officer or employee performing the duties and exercising the functions of the delegatee. All delegated authority shall be exercised in accordance with such policy and administrative determinations as may, from time to time, be made by the Administrator, the Executive Committee, or both.

§ 401.12 *Conflicting Delegations.* All delegations of authority in conflict with the delegations included in this part are, to the extent of such conflict, withdrawn.

Issued and to become effective October 16, 1946.

[SEAL] PAUL J. RAVER,
Administrator.

[F. R. Doc. 46-20168; Filed, Nov. 8, 1946; 8:56 a. m.]

TITLE 14—CIVIL AVIATION

Chapter I—Civil Aeronautics Board

[Amdt. 03-0]

PART 03—AIRPLANE AIRWORTHINESS; NORMAL, UTILITY, ACROBATIC, AND RESTRICTED PURPOSE CATEGORIES

The purpose of this part of the Civil Air Regulations is to establish airworthiness standards for airplanes in the Normal, Utility, Acrobatic, and Restricted Purpose categories, such standards to include all factors which affect the airplane's strength, operation, and serviceability.

This part of the Civil Air Regulations was originally made effective by the Board on November 13, 1945. Since that date experience gained in administering the part indicated the necessity for clarifying alterations, for rewording and rearrangement of certain sections, and for a few minor changes in substance. This part as now revised includes such alterations, rewording, rearrangement, and changes.

It appearing that: this revised Part 03 of the Civil Air Regulations as compared to the same part made effective November 13, 1945, contains changes of only a minor nature which will not impose any substantial burden upon the manufacturers; these changes have been submitted to and discussed with representatives of the aircraft industry; in view of the foregoing, sufficient public procedure has been afforded with regard to such minor changes, and further notice or public procedure would serve no useful purpose; and that any further proceedings would serve only to delay the issuance of this revised part of the Civil Air Regulations which it is in the public interest to adopt at this time.

The Civil Aeronautics Board finds that the notice and public procedure provided for in section 4 (a) of the Administrative Procedure Act is unnecessary with respect to the revision of this part of the Civil Air Regulations.

Now, therefore: effective December 15, 1946, Part 03 of the Civil Air Regulations is revised to read as follows:

Sec.

AUTHORITY: §§ 03.0 to 03.71, inclusive, issued under 52 Stat. 984, 1007; 49 U. S. C. 425, 451.

§ 03.0 *General.*

§ 03.00 *Scope.* An airplane which has no features or characteristics rendering it unsafe for the category for which it is to be certificated is eligible for type and airworthiness certification, if it complies with all applicable provisions of this part, or, in the event it does not so comply, if it is shown to meet the same level of safety as that provided for in this part.

§ 03.01 *Date of effectiveness.* Airplanes certificated as a type on or after November 13, 1945, shall comply either with (1) the entire provisions of Part 04 of the Civil Air Regulations in effect immediately prior to November 9, 1945, or (2) the entire provisions prescribed herein, except that airplanes certificated under (1) may incorporate provisions of (2) when the Administrator finds the standard of safety to be equivalent to the particular and all related items of the latter.

Airplanes certificated as a type on or after January 1, 1947, shall comply with the provisions contained herein. If the prototype is not flown prior to January 1, 1947, and satisfactory evidence is presented indicating that the design work of the type was well advanced prior to November 13, 1945, and the delay of completion of the airplane was due to causes beyond the manufacturer's control, the Administrator may certificate the airplane as a type under the provisions of Part 04 which were in effect prior to November 9, 1945.

Unless otherwise specified, compliance with an amendment to this part shall be mandatory only for airplanes for which application for a type certificate has been received subsequent to the effective date of such amendment.

§ 03.02 *Airplane categories.* In this part airplanes are divided upon the basis of their intended operation into the following categories for the purpose of certification.

NOTE: For rules governing the eligibility of airplanes certificated under this part for use in air carrier operations see Civil Air Regulations Parts 40, 41, 42 and 61.

Normal—Suffix "N"

Airplanes in this category are intended for nonacrobatic, nonscheduled passenger, and nonscheduled cargo operation.

Utility—Suffix "U"

Airplanes in this category are intended for normal operations and limited acrobatic maneuvers. These airplanes are not suited for use in snap or inverted maneuvers.

Acrobatic—Suffix "A"

Airplanes in this category will have no specific restrictions as to type of maneuver permitted unless the necessity therefor is disclosed by the required flight tests.

Restricted Purpose—Suffix "R"

Airplanes in this category are intended to be operated for restricted purposes not logically encompassed by the foregoing categories. The requirements of this category shall consist of all of the provisions for any one of the foregoing categories which are not rendered inapplicable by the nature of the special purpose involved, plus suitable operating restrictions which the Administrator finds will provide a level of safety equivalent to that contemplated for the foregoing categories.

An airplane may be certificated under the requirements of a particular category, or in more than one category, provided that all of the requirements of such categories are met. Sections of this part which apply to only one or more, but not all, categories are identified in this part by the appropriate suffixes, as indicated above, added to the section number. All sections not identified by a suffix are applicable to all categories except as otherwise specified.

§ 03.03 *Airworthiness certificates.* Airworthiness certificates are classified as follows:

(a) *NC certificates.* In order to become eligible for an NC certificate, an airplane must be shown to comply with the requirements contained in this part for at least one category, but not the restricted purpose category.

(b) *NR certificates.* In order to become eligible for an NR certificate, an airplane must be shown to comply with the requirements of the restricted purpose category.

(c) *NX certificates.* An airplane will become eligible for an NX certificate when the applicant presents satisfactory evidence that the airplane is to be flown for experimental purposes and the Administrator finds it may, with appropriate restrictions, be operated for that purpose in a manner which does not endanger the general public. Airplanes used in racing and exhibition flying may be issued NX certificates under the terms of this section. The applicant shall submit sufficient data such as photographs to identify the airplane satisfactorily

and, upon inspection of the airplane, any pertinent information found necessary by the Administrator to safeguard the general public.

An airplane manufactured in accordance with a type certificate (see § 03.03) and conforming with the type design will become eligible for an airworthiness certificate when, upon inspection of the airplane, the Administrator determines it so to conform and that the airplane is in a condition for safe operation. For each newly manufactured airplane this determination shall include a flight check by the applicant.

§ 03.04 *Type certificates.* A type certificate will be issued when the following requirements are met:

§ 03.041 *Data required for NC and NR certification.* The applicant for a type certificate shall submit to the Administrator the following:

Such descriptive data, test reports, and computations as are necessary to demonstrate that the airplane complies with the airworthiness requirements. The descriptive data shall be known as the type design and shall consist of drawings and specifications disclosing the configuration of the airplane and all design features covered in the airworthiness requirements as well as sufficient information on dimensions, materials, and processes to define the strength of the structure. The type design shall describe the airplane in sufficient detail to permit the airworthiness of subsequent airplanes of the same type to be determined by comparison with the type design.

§ 03.042 *Inspection and tests for NC and NR certification.* The authorized representatives of the Administrator shall have access to the airplane and may witness or conduct such inspections and tests as are necessary to determine compliance with the airworthiness requirements.

§ 03.0420 *Inspection.* Inspections and tests shall include all those found necessary by the Administrator to insure that the airplane conforms with the following:

(a) All materials and products are in accordance with the specification given in the type design.

(b) All parts of the airplane are constructed in accordance with the drawings contained in the type design.

(c) All manufacturing processes, construction, and assembly are such that the design strength and safety contemplated by the type design will be realized in service.

§ 03.0421 *Flight tests.* Upon satisfactory completion of all necessary inspection and testing on the ground, and upon receipt from the applicant of a report of flight tests conducted by him, and satisfactory proof of the conformity of the airplane with the type design, such official flight tests as the Administrator finds necessary to prove compliance with this part shall be conducted.

§ 03.05 *Changes.* Changes shall be substantiated to demonstrate compliance of the airplane with the appropriate airworthiness requirements in effect when the particular airplane was certificated as a type, unless the holder of the type certificate chooses to show compliance with the currently effective requirements subject to the approval of the Administrator, or unless the Administrator finds it necessary to require compliance with current airworthiness requirements.

§ 03.050 *Minor changes.* Minor changes to certificated airplanes which obviously do not impair the condition of the airplane for safe operation shall be approved by the authorized representatives of the Administrator prior to the submittal to the Administrator of any required revised drawings.

§ 03.051 *Major changes.* A major change is any change not covered by minor changes as defined in § 03.050.

§ 03.052 *Service experience changes.* When experience shows that any particular part or characteristic of an airplane is unsafe, the holder of the type certificate for such airplane shall submit for approval of the Administrator the design changes which are necessary to correct the unsafe condition. After the unsafe condition becomes known the Administrator shall withhold the issuance of airworthiness certificates for additional airplanes of the type involved until he has approved the design changes and until the additional airplanes are modified to include such changes. Upon approval by the Administrator the design changes shall be considered as a part of the type design, and descriptive data covering these changes shall be made available by the holder of the type certificate to all owners of airplanes previously certificated under such type certificate.

§ 03.0520 *Application to earlier airworthiness requirements.* In the case of airplanes approved as a type under the terms of earlier airworthiness requirements, the Administrator may require that an airplane submitted for an original airworthiness certificate comply with such portions of the currently effective airworthiness requirements as may be necessary for safety.

§ 03.07 *Definitions.*

§ 03.070 *General.*

§ 03.0701 *Standard atmosphere.* The standard atmosphere shall be based upon the following assumptions:

(a) The air is a dry perfect gas.

(b) The temperature at sea level is 59° F.

(c) The pressure at sea level is 29.92 inches Hg.

(d) The temperature gradient from sea level to the altitude at which the temperature becomes −67° F. is −0.003566° F./ft. and zero thereabove.

(e) The density ρ_0 at sea level under the above conditions is 0.002378 lbs. sec²/ft.⁴.

§ 03.0702 *Hot day condition.* See § 03.4400.

§ 03.0703 *Airplane configuration.* This term refers to the position of the various elements affecting the aerodynamic characteristics of the airplane, such as landing gear and flaps.

§ 03.071 *Weights.*

	Reference sections
Empty weight: The actual weight used as a basis for determining operating weights	03.112
Maximum weight: The maximum weight at which the airplane may operate in accordance with the airworthiness requirements	03.113
Minimum weight: The minimum weight at which compliance with the airworthiness requirements is demonstrated	03.114
Maximum design weight: The maximum weight used for the structural design of the airplane	03.210
Minimum design weight: The minimum weight condition investigated in the structural flight load conditions, not greater than the minimum weight specified in § 03.114	03.210
Design landing weight: The weight used in the structural investigation of the airplane for normal landing conditions. Under the provisions of § 03.240, this weight may be equal to or less than the maximum design weight	03.240
Unit weights for design purposes:	
Gasoline	6 lbs. per U. S. gallon.
Lubricating oil	7.5 lbs. per U. S. gallon.
Crew and passengers	170 lbs. per person.

§ 03.072 *Power.*

One horsepower: 33,000 ft. lbs. per minute.

Take-off power: The take-off rating of the engine established in accordance with part 13, "Aircraft Engine Airworthiness."

Maximum continuous power: The maximum continuous rating of the engine established in accordance with part 13, "Aircraft Engine Airworthiness."

§ 03.073 *Speeds.*

V_t: True air speed of the airplane relative to the undisturbed air.

In the following symbols having subscripts, V denotes:

(a) "Equivalent" air speed for structural design purposes equal to $V_t\sqrt{\rho/\rho_0}$.

(b) "True indicated" or "calibrated" air speed for performance and operating purposes equal to indicator reading corrected for position and instrument errors.

	Reference sections
V_{s0} stalling speed, in the land configuration	03.121
V_{s1} stalling speed in the configurations specified for particular conditions	03.121
V_{sf} computed stalling speed at design landing weight with flaps fully deflected	03.212
V_x speed for best angle of climb.	
V_y speed for best rate of climb.	
V_{mc} minimum control speed	03.1312
V_f design speed for flight load conditions with flaps in landing position	03.212
V_{fe} flaps extended speed	03.6104
V_p design maneuvering speed	03.2110
V_c design cruising speed	03.2110
V_d design dive speed	03.2110
V_{ne} never exceed speed	03.6101
V_{no} maximum structural cruising speed	03.6102
V_h maximum speed in level flight at maximum continuous power.	

§ 03.074 *Structural terms.*

Structure: Those portions of the airplane the failure of which would seriously endanger the safety of the airplane.

Design wing area, S: The area enclosed by the wing outline (including allerons, and flaps in the retracted position, but ignoring

fillets and fairings) on a surface containing the wing chords. The outline is assumed to extend through the nacelles and fuselage to the centerline of symmetry.

Aerodynamic coefficients: C_L, C_N, C_M, etc., used herein, are nondimensional coefficients for the forces and moments acting on an airfoil, and correspond to those adopted by the U. S. National Advisory Committee for Aeronautics.

C_L = airfoil lift coefficient.

C_N = airfoil normal force coefficient (normal to wing chord line).

C_{NA} = airplane normal force coefficient (based on lift of complete airplane and design wing area).

C_M = pitching moment coefficient.

Loads	*Reference sections*
Limit load: The maximum load anticipated in service	03.200
Ultimate load: The maximum load which a part of structure must be capable of supporting	03.202
Factor of safety: The factor by which the limit load must be multiplied to establish the ultimate load	03.201

Load factor or acceleration factor, n: The ratio of the force acting on a mass to the weight of the mass. When the force in question represents the net external load acting on the airplane in a given direction, n represents the acceleration in that direction in terms of the gravitational constant.

Limit load factor: The load factor corresponding to limit load.

Ultimate load factor: The load factor corresponding to ultimate load.

§ 03.075 *Susceptibility of materials to fire.* Where necessary for the purpose of determining compliance with any of the following definitions, the Administrator shall prescribe the heat conditions and testing procedures which any specific material or individual part must meet.

(a) *Fireproof.* "Fireproof" material means a material which will withstand heat equally well or better than steel in dimensions appropriate for the purpose for which it is to be used. When applied to material and parts used to confine fires in designated fire zones "fireproof" means that the material or part will perform this function under the most severe conditions of fire and duration likely to occur in such zones.

(b) *Fire-resistant.* When applied to sheet or structural members, "fire-resistant" material shall mean a material which will withstand heat equally well or better than aluminum alloy in dimensions appropriate for the purpose for which it is to be used. When applied to fluid-carrying lines, this term refers to a line and fitting assembly which will perform its intended protective functions under the heat and other conditions likely to occur at the particular location.

(c) *Flame-resistant.* "Flame-resistant" material means material which will not support combustion to the point of propagating, beyond safe limits, a flame after removal of the ignition source.

(d) *Flash-resistant.* "Flash-resistant" material means material which will not burn violently when ignited.

(e) *Inflammable.* "Inflammable" fluids or gases means those which will ignite readily or explode.

§ 03.1 *Flight requirements.*

§ 03.10 *General.*

§ 03.100 *Policy re proof of compliance.* Compliance with the requirements specified in § 03.1 governing functional characteristics shall be demonstrated by suitable flight or other tests conducted upon an airplane of the type, or by calculations based upon the test data referred to above, provided that the results so obtained are substantially equal in accuracy to the results of direct testing. Compliance with each requirement must be provided at the critical combination of airplane weight and center of gravity position within the range of either for which certification is desired. Such compliance must be demonstrated by systematic investigation of all probable weight and center of gravity combinations or must be reasonably inferable from such as are investigated.

§ 03.101 The applicant shall provide a person holding an appropriate pilot certificate to make the flight tests, but a designated representative of the Administrator may pilot the airplane insofar as that may be necessary for the determination of compliance with the airworthiness requirements.

§ 03.102 Official type tests will be discontinued until corrective measures have been taken by the applicant when either:

(a) The applicant's test pilot is unable or unwilling to conduct any of the required flight tests; or

(b) Items of noncompliance with requirements are found which may render additional test data meaningless or are of such nature as to make further testing unduly hazardous.

§ 03.103 Adequate provisions shall be made for emergency egress and use of parachutes by members of the crew during the flight tests.

§ 03.104 The applicant shall submit to the representative of the Administrator a report covering all computations and tests required in connection with calibration of instruments used for test purposes and correction of test results to standard atmospheric conditions. The representative of the Administrator will conduct any flight tests which he finds to be necessary in order to check the calibration and correction report.

§ 03.11 *Weight and balance.* There shall be established, as a part of the type inspection, ranges of weight and center of gravity within which the airplane may be safely operated.

When low fuel adversely affects balance or stability, the airplane shall be so tested as to simulate the condition existing when the amount of usable fuel on board does not exceed one gallon for every 12 maximum continuous horsepower of the engine or engines installed.

§ 03.110 *Use of ballast.* Removable ballast may be used to enable airplanes to comply with the flight requirements in accordance with the following provisions:

§ 03.1100 The place or places for carrying ballast shall be properly designed, installed, and plainly marked as specified in § 03.6220.

§ 03.1101 The Airplane Flight Manual shall include instructions regarding the proper disposition of the removable ballast under all loading conditions for which such ballast is necessary, as specified in § 03.62.

§ 03.112 *Empty weight.* The empty weight and corresponding center of gravity location shall include all fixed ballast, the unusable fuel supply (see § 03.4221), undrainable oil, full engine coolant, and hydraulic fluid. The weight and location of items of equipment installed when the airplane is weighed shall be noted in the Airplane Flight Manual.

§ 03.113 *Maximum weight.* The maximum weight shall not exceed any of the following:

(a) The weight selected by the applicant.

(b) The design weight for which the structure has been proven.

(c) The maximum weight at which compliance with all of the requirements specified is demonstrated, and shall not be less than the sum of the weights of the following:

(1) The empty weight as defined by § 03.112.

(2) One gallon of usable fuel (see § 03.4221) for every 7 maximum continuous horsepower for which the airplane is certificated.

(3) The full oil capacity.

(4) 170 lbs. in all seats (normal category) or 190 lbs. in all seats (utility and acrobatic category) unless placarded otherwise.

§ 03.114 *Minimum weight.* The minimum weight shall not exceed the sum of the weights of the following:

(a) The empty weight as defined by § 03.112.

(b) The minimum crew necessary to operate the airplane (170 lbs. for each crew member).

(c) One gallon of usable fuel (see § 03.4221) for every 12 maximum continuous horsepower for which the airplane is certificated.

(d) Either one gallon of oil for each 25 gallons of fuel specified in (c) or one gallon of oil for each 75 maximum continuous horsepower for which the airplane is certificated, whichever is greater.

§ 03.115 *Center of gravity position.* If the center of gravity position under any possible loading condition between the maximum weight as specified in § 03.113 and the minimum weight as specified in § 03.114 lies beyond (1) the extremes selected by the applicant, or (2) the extremes for which the structure has been proven, or (3) the extremes for which compliance with all functional requirements were demonstrated, loading instructions shall be provided in the Airplane Flight Manual as specified in § 03.63.

§ 03.12 *Performance.* The following items of performance shall be determined and the airplane shall comply with the corresponding requirements in standard atmosphere and still air.

§ 03.121 *Definition of stalling speeds.* (a) V_{s0} denotes the true indicated stalling speed, if obtainable, or the minimum steady flight speed at which the airplane is controllable, in miles per hour, with:

(1) Engines idling, throttles closed (or not more than sufficient power for zero thrust).

(2) Propellers in position normally used for take-off.

(3) Landing gear extended.

(4) Wing flaps in the landing position.

(5) Cowl flaps closed.

(6) Center of gravity in the most unfavorable position within the allowable landing range.

(7) The weight of the airplane equal to the weight in connection with which V_{s0} is being used as a factor to determine a required performance.

(b) V_{s1} denotes the true indicated stalling speed, if obtainable, otherwise the calculated value in miles per hour, with:

(1) Engines idling, throttles closed (or not more than sufficient power for zero thrust).

(2) Propellers in position normally used for take-off, the airplane in all other respects (flaps, landing gear, etc.) in the particular condition existing in the particular test in connection with which V_{s1} is being used.

(3) The weight of the airplane equal to the weight in connection with which V_{s1} is being used as a factor to determine a required performance.

These speeds shall be determined by flight tests using the procedure outlined in § 03.134 (a) and (b).

§ 03.1210 *Stalling speed.* V_{s0} at maximum weight shall not exceed 70 mph for (1) single-engine airplanes and (2) multiengine airplanes which do not have the rate of climb with critical engine inoperative specified in § 03.123 (b).

§ 03.122 *Take-off.* The distance required to take off and climb over a 50 ft. obstacle shall be determined under the following conditions:

(a) Most unfavorable combination of weight and center of gravity location.

(b) Engines operating within the approved limitations.

(c) Cowl flaps in the position normally used for take-off.

Upon obtaining a height of 50 ft. above the level take-off surface, the airplane shall have attained a speed of not less than 1.3 V_{s1} unless a lower speed of not less than V_x plus 5 can be shown to be safe under all conditions, including turbulence and complete engine failure.

The distance so obtained, the type of surface from which made, and the pertinent information with respect to the cowl flap position, the use of flight path control devices and landing gear retraction system shall be entered in the Airplane Flight Manual. The take-off shall be made in such a manner that its reproduction shall not require an exceptional degree of skill on the part of the pilot or exceptionally favorable conditions.

§ 03.123 *Climb*—(a) *Normal climb condition.* The steady rate of climb at sea level shall be at least 300 feet per minute, and the steady angle of climb at least 1:12 for landplanes or 1:15 for seaplanes with:

(1) Not more than maximum continuous power on all engines.

(2) Landing gear fully retracted.

(3) Wing flaps in take-off position.

(4) Cowl flaps in the position used in cooling tests specified in § 03.44.

(b) All multiengine airplanes having a stalling speed V_{s0} greater than 70 m. p. h. or a maximum weight greater than 6,000 lbs. shall have a steady rate of climb of at least 0.02 V_{s0}^2 in feet per minute at an altitude of 5,000 feet with the critical engine inoperative and:

(1) The remaining engines operating at not more than maximum continuous power.

(2) The inoperative propeller in the minimum drag position.

(3) Landing gear retracted.

(4) Wing flaps in the most favorable position.

(5) Cowl flaps in the position used in cooling tests specified in § 03.44.

(c) *Balked landing conditions.* The steady angle of climb at sea level shall be at least 1:30 with:

(1) Take-off power on all engines.

(2) Landing gear extended.

(3) Wing flaps in landing position.

If rapid retraction is possible with safety without loss of altitude and without requiring sudden changes of angle of attack or exceptional skill on the part of the pilot, wing flaps may be retracted.

§ 03.124 *Landing.* The horizontal distance required to land and to come to a complete stop (to a speed of approximately 3 m. p. h. for seaplanes or float planes) from a point at a height of 50 ft. above the landing surface shall be determined as follows:

(a) Immediately prior to reaching the 50 ft. altitude, a steady gliding approach shall have been maintained, with a true indicated air speed of at least 1.3 V_{s0}.

(b) The landing shall be made in such a manner that there is no excessive vertical acceleration, no tendency to bounce, nose over, ground loop, porpoise, or water loop, and in such a manner that its reproduction shall not require any exceptional degree of skill on the part of the pilot or exceptionally favorable conditions.

The distance so obtained, the type of landing surface on which made and the pertinent information with respect to cowl flap position, and the use of flight path control devices shall be entered in the Airplane Flight Manual.

§ 03.13 *Flight characteristics.* The airplane shall meet the following requirements at all normally expected operating altitudes under all critical loading conditions within the range of center of gravity and, except as otherwise specified, at the maximum weight for which certification is sought.

§ 03.131 *Controllability.* The airplane shall be satisfactorily controllable and maneuverable during take-off, climb, level flight, dive, and landing with or without power. It shall be possible to make a smooth transition from one flight condition to another, including turns and slips, without requiring an exceptional degree of skill, alertness, or strength on the part of the pilot and without danger of exceeding the limit load factor under all conditions of operation probable for the type, including for multiengine airplanes those conditions normally encountered in the event of sudden failure of any engine. Compliance with "strength of pilots" limits need not be demonstrated by quantitative tests unless the Administrator finds the condition to be marginal. In the latter case they shall not exceed maximum values found by the Administrator to be appropriate for the type but in no case shall they exceed the following limits:

	Type	Pitch	Roll	Yaw
(a) For temporary application	Stick	60	30	150
	Wheel	75	60	150
		Applied to rim		
(b) For prolonged application		10	5	20

§ 03.131–U *Controllability.* It shall be demonstrated that the approved acrobatic maneuvers can be performed safely. Safe entry speeds shall be determined for these maneuvers.

§ 03.131–A *Controllability.* It shall be demonstrated that acrobatic maneuvers can be performed readily and safely. Safe entry speeds shall be determined for these maneuvers.

§ 03.1310 *Longitudinal control.* The airplane shall be demonstrated to comply with the following requirements.

§ 03.13100 It shall be possible at all speeds below V_x to pitch the nose downward so that the rate of increase in air speed is satisfactory for prompt acceleration to V_x with:

(a) Maximum continuous power on all engines, the airplane trimmed at V_x.

(b) Power off, the airplane trimmed at 1.4 V_{s1}.

(c) Wing flaps and landing gear both extended and retracted.

§ 03.13101 During each of the controllability demonstrations outlined below it shall not require a change in the trim control or the exertion of more control force than can be readily applied with one hand for a short period. Each maneuver shall be performed with the landing gear extended.

(a) (1) With power off, flaps retracted, and the airplane trimmed at 1.4 V_{s1}, the flaps shall be extended as rapidly as possible while maintaining the air speed at approximately 40 percent above the instantaneous value of the stalling speed.

(2) Same as subparagraph (1) of this paragraph, except the flaps shall be initially extended and the airplane trimmed at 1.4 V_{s1}, then the flaps shall be retracted as rapidly as possible.

(3) Same as subparagraph (2) of this paragraph, except maximum continuous power shall be used.

(b) (1) With power off, the flaps retracted, and the airplane trimmed at 1.4 V_{s1}, take-off power shall be applied

quickly while the same air speed is maintained.

(2) Same as subparagraph (1) of this paragraph, except with the flaps extended.

(c) With power off, flaps extended, and the airplane trimmed at 1.4 V_{s1}, air speeds within the range of 1.1 V_{s1} to 1.7 V_{s1} or V_f, whichever is the lesser, shall be obtained and maintained.

§ 03.13102 It shall be possible without the use of exceptional piloting skill to maintain essentially level flight when flap retraction from any position is initiated during steady horizontal flight at 1.1 V_{s1} with simultaneous application of not more than maximum continuous power.

§ 03.1311 *Lateral and directional control.*

§ 03.13110 It shall be possible with multiengine airplanes to execute 15° banked turns both with and against the inoperative engine from steady climb at 1.4 V_{s1} or V_y for the condition with:

(a) Maximum continuous power on the operating engines,

(b) Rearmost center of gravity,

(c) Landing gear retracted and extended,

(d) Wing flaps in most favorable climb position,

(e) Maximum weight,

(f) The inoperative propeller in its minimum drag condition.

§ 03.13111 It shall be possible with multiengine airplanes, while holding the wings level laterally within 5°, to execute sudden changes in heading in both directions without dangerous characteristics being encountered. This shall be demonstrated at 1.4 V_{s1} or V_y up to heading changes of 15°, except that the heading change at which the rudder force corresponds to that specified in § 03.131 need not be exceeded, with:

(a) The critical engine inoperative,

(b) Maximum continuous power on the operating engine(s),

(c) Landing gear retracted and extended,

(d) Wing flaps in the most favorable climb position,

(e) The inoperative propeller in its minimum drag condition,

(f) The airplane center of gravity at its rearmost position.

§ 03.1312 *Minimum control speed* (V_{mc}). A minimum speed shall be determined under the conditions specified below, such that when any one engine is suddenly made inoperative at that speed, it shall be possible to recover control of the airplane, with the one engine still inoperative, and to maintain it in straight flight at that speed, either with zero yaw or, at the option of the applicant, with a bank not in excess of 5°. Such speed shall not exceed 1.3 V_{s1}, with:

(a) Take-off or maximum available power on all engines,

(b) Rearmost center of gravity,

(c) Flaps in take-off position,

(d) Landing gear retracted.

In demonstrating this minimum speed, the rudder force required to maintain it shall not exceed forces specified in § 03.131, nor shall it be necessary to throttle the remaining engines. During recovery the airplane shall not assume any dangerous attitude, nor shall it require exceptional skill, strength, or alertness on the part of the pilot to prevent a change of heading in excess of 20° before recovery is complete.

§ 03.132 *Trim.* The means used for trimming the airplane shall be such that, after being trimmed and without further pressure upon or movement of either the primary control or its corresponding trim control by the pilot or the automatic pilot, the airplane will maintain:

(a) Lateral and directional trim in level flight at a speed of 0.9 V_h or at V_c, if lower, with the landing gear and wing flaps retracted;

(b) Longitudinal trim under the following conditions:

(1) During a climb with maximum continuous power at a speed between V_x and 1.4 V_{s1}, landing gear retracted, wing flaps both retracted and in the take-off position.

(2) During a glide with power off at a speed not in excess of 1.4 V_{s1}, landing gear extended, wing flaps both retracted and extended under the forward center of gravity position approved with the maximum authorized weight and under the most forward center of gravity position approved, regardless of weight.

(3) During level flight at any speed from 0.9 V_h to V_x or 1.4 V_{s1} with landing gear and wing flaps retracted.

In addition to the above, multiengine airplanes shall comply with paragraph (c) of this section:

(c) Longitudinal and directional trim at a speed between V_y and 1.4 V_{s1}, during climbing flight with the critical of two or more engines inoperative, with:

(1) The other engine(s) operating at maximum continuous power,

(2) The landing gear retracted,

(3) Wing flaps retracted,

(4) Bank not in excess of 5°.

§ 03.133 *Stability.* The airplane shall be longitudinally, directionally, and laterally stable in accordance with the following sections. Suitable stability and control "feel" (static stability) shall be required in other conditions normally encountered in service, if flight tests show such stability to be necessary for safe operation.

§ 03.1331 *Static longitudinal stability.* In the configurations outlined in § 03.13310 and with the airplane trimmed as indicated, the characteristics of the elevator control forces and the friction within the control system shall be such that:

(a) A pull shall be required to obtain and maintain speeds below the specified trim speed and a push to obtain and maintain speeds above the specified trim speed. This shall be so at any speed which can be obtained without excessive control force, except that such speeds need not be greater than the appropriate maximum permissible speed or less than the minimum speed in steady unstalled flight.

(b) The air speed shall return to within 10 percent of the original trim speed when the control force is slowly released from any speed within the limits defined in (a) above.

§ 03.13310 *Specific conditions.* In conditions (a), (b), and (c) below, within the speeds specified, the stable slope of stick force versus speed curve shall be such that any substantial change in speed is clearly perceptible to the pilot through a resulting change in stick force.

(a) *Landing.* The stick force curve shall have a stable slope and the stick force shall not exceed 40 lbs. at any speed between 1.1 V_{s1} and 1.8 V_{s1} with:

(1) Wing flaps in the landing position,

(2) The landing gear extended,

(3) Maximum weight,

(4) Throttles closed on all engines,

(5) The airplane trimmed at 1.4 V_{s1} with throttles closed.

(b) *Climb.* The stick force curve shall have a stable slope at all speeds between 1.2 V_{s1} and 1.6 V_{s1} with:

(1) Wing flaps retracted,

(2) Landing gear retracted,

(3) Maximum weight,

(4) 75% of maximum continuous power,

(5) The airplane trimmed at 1.4 V_{s1}.

(c) *Cruising.* (1) Between 1.3 V_{s1} and the maximum permissible speed, the stick force shall have a stable slope at all speeds obtainable with a stick force not in excess of 40 lbs. with:

(i) Landing gear retracted.

(ii) Wing flaps retracted.

(iii) Maximum weight.

(iv) 75 percent of maximum continuous power.

(v) The airplane trimmed for level flight with 75% of the maximum continuous power.

(2) Same as subparagraph (1) of this paragraph, except that the landing gear shall be extended and the level flight trim speed need not be exceeded.

Instrumented stick force measurements need not be made when changes in speed are clearly reflected by changes in stick forces and the maximum forces obtained in the above conditions are not excessive.

§ 03.1332 *Dynamic longitudinal stability.* Any short period oscillation occurring between stalling speed and maximum permissible speed shall be heavily damped with the primary controls (1) free, and (2) in a fixed position.

§ 03.1333 *Directional and lateral stability.*

§ 03.13330 *Three control airplanes.* (a) The static directional stability, as shown by the tendency to recover from a skid with rudder free, shall be positive for all flap positions and symmetrical power conditions, and for all speeds from 1.2 V_{s1} up to the maximum permissible speed.

(b) The static lateral stability as shown by the tendency to raise the low wing in a sideslip, for all flap positions and symmetrical power conditions, shall:

(1) Be positive at the maximum permissible speed.

(2) Not be negative at a speed equal to 1.2 V_{s1}.

(c) In straight steady sideslips (unaccelerated forward slips), the aileron

and rudder control movements and forces shall increase steadily, but not necessarily in constant proportion, as the angle of sideslip is increased; the rate of increase of the movements and forces shall lie between satisfactory limits up to sideslip angles considered appropriate to the operation of the type. At greater angles, up to that at which the full rudder control is employed or a rudder pedal force of 150 lbs. is obtained, the rudder pedal forces shall not reverse and increased rudder deflection shall produce increased angles of sideslip.

Sufficient bank shall accompany sideslipping to indicate adequately any departure from steady unyawed flight.

(d) Any short period oscillation occurring between stalling speed and maximum permissible speed shall be heavily damped with the primary controls (1) free and (2) in a fixed position.

§ 03.13331 *Two-control (or simplified) airplanes.* (a) The directional stability shall be shown to be adequate by demonstrating that the airplane in all configurations can be rapidly rolled from a 45° bank to a 45° bank in the opposite direction without exhibiting dangerous skidding characteristics.

(b) Lateral stability shall be shown to be adequate by demonstrating that the airplane will not assume a dangerous attitude or speed when all the controls are abandoned for a period of two minutes. This demonstration shall be made in moderately smooth air with the airplane trimmed for straight level flight at 0.9 V_h (or at V_c, if lower), flaps and gear retracted, and with rearward c. g. loading.

(c) Any short period oscillation occurring between the stalling speed and the maximum permissible speed shall be heavily damped with the primary controls (1) free and (2) in a fixed position.

§ 03.134 *Stalling.* Stalls shall be demonstrated under two conditions:

(a) With power off.

(b) With the power setting not less than that required to show compliance with § 03.123 (a).

In either condition it shall be possible, with flaps and landing gear in any position, center of gravity in the position least favorable for recovery, and with appropriate airplane weights for: (1) Airplanes having independently controlled rolling and directional controls to produce and to correct roll by unreversed use of the rolling control and to produce and to correct yaw by unreversed use of the directional control during the maneuvers described below up to the time when the airplane pitches, (2) two-control airplanes having either interconnected lateral and directional controls or providing only one of these controls to produce and to correct roll by unreversed use of the rolling control without producing excessive yaw during the maneuvers described below up to the time the airplane pitches.

During the recovery portions of the maneuver, pitch shall not exceed 30° below level, there shall be no loss of altitude in excess of 100 ft., and not more than 15° roll or yaw shall occur when controls are not used for one second after pitch starts and are used thereafter only in a normal manner.

Where clear and distinctive stall warning is apparent to the pilot at a speed at least 5 percent above the stalling speed with flaps and landing gear in any position, both in straight and turning flight, these requirements are modified as follows:

(1) It shall be possible to prevent more than 15° roll or yaw by the normal use of controls.

(2) Any loss of altitude in excess of 100 ft. or any pitch in excess of 30° below level shall be entered in the Airplane Flight Manual.

In demonstrating these qualities, the order of events shall be:

(i) With trim controls adjusted for straight flight at a speed of approximately 1.4 V_{s_1}, reduce speed by means of the elevator control until the speed is steady at slightly above stalling speed, then

(ii) Pull elevator control back at a rate such that the airplane speed reduction does not exceed one mile per hour per second until a stall is produced as evidenced by an uncontrollable downward pitching motion of the airplane, or until the control reaches the stop. Normal use of the elevator control for recovery may be made after such pitching motion is unmistakably developed.

§ 03.1340 *Climbing stalls.* When stalled from an excessive climb attitude it shall be possible to recover from this maneuver without exceeding the limiting air speed or the allowable acceleration limit.

§ 03.1341 *Turning flight stalls.* When stalled during a coordinated 30° banked turn with 75 percent maximum continuous power on all engines, flaps and landing gear retracted, it shall be possible to recover to normal level flight without encountering excessive loss of altitude, uncontrollable rolling characteristics, or uncontrollable spinning tendencies. These qualities shall be demonstrated by performing the following maneuver:

After a steady curvilinear level coordinated flight condition in a 30° bank is established and while maintaining the 30° bank, the airplane shall be stalled by steadily and progressively tightening the turn with the elevator control until the airplane is stalled or until the elevator has reached its stop. When the stall has fully developed, recovery to level flight shall be made with normal use of the controls.

§ 03.1342 *One - engine - inoperative stalls.* Multiengine airplanes shall not display any undue spinning tendency and shall be safely recoverable without applying power to the inoperative engine when stalled with:

(a) The critical engine inoperative,

(b) Flaps and landing gear retracted,

(c) The remaining engines operating at up to 75 percent of maximum continuous power, except that the power need not be greater than that at which the use of maximum control travel just holds the wings laterally level in approaching the stall. The operating engines may be throttled back during the recovery from the stall.

§ 03.155–N *Spinning.* All airplanes of 4,000 lbs. or less maximum weight shall recover from a one-turn spin with controls assisted to the extent necessary to overcome friction in not more than one and one-half additional turns and without exceeding either the limiting air speed or the limit positive maneuvering load factor for the airplane. It shall not be possible to obtain uncontrollable spins by means of any possible use of the controls. Compliance with the above shall be demonstrated at any permissible combination of weight and center of gravity positions obtainable with all or part of the design useful load.

All airplanes in this category, regardless of weight, shall be placarded against spins or demonstrated to be "characteristically incapable of spinning" in which case they shall be so designated. (See § 03.1350–NU.)

§ 03.135–U *Spinning.* Airplanes in this category shall comply with either the entire requirements of § 03.135–N or the entire requirements of § 03.135–A.

§ 03.135–A *Spinning.* All airplanes in this category must be capable of spinning and shall comply with the following:

At any permissible combination of weight and center of gravity position obtainable with all or part of the design useful load, the airplane shall recover from a six-turn spin with controls free in not more than four additional turns after releasing the controls. If the airplane will not recover as prescribed with controls free but will recover with the controls assisted to the extent necessary to overcome friction, the airplane may be certificated with the rearmost center of gravity position 2 percent forward of the position used in the test.

It shall be possible to recover at any point in the spinning described above by using the controls in a normal manner for that purpose in not more than one and one-half additional turns, and without exceeding either the limiting air speed or the limit positive maneuvering load factor for the airplane. It shall not be possible to obtain uncontrollable spins by means of any possible use of the controls.

§ 03.1350–NU When it is desired to designate an airplane as a type "characteristically incapable of spinning," the flight tests to demonstrate this characteristic shall also be conducted with:

(a) A maximum weight 5 percent in excess of the weight for which approval is desired,

(b) A center of gravity at least 3 percent aft of the rearmost position for which approval is desired,

(c) An available up elevator travel 4° in excess of that to which the elevator travel is to be limited by appropriate stops,

(d) An available rudder travel 7°, in both directions, in excess of that to which the rudder travel is to be limited by appropriate stops.

§ 03.14 *Ground and water characteristics.* All airplanes shall comply with the following requirements:

§ 03.141 *Longitudinal stability and control.* There shall be no uncontrollable tendency for landplanes to nose over in any operating condition reasonably expected for the type, or when rebound occurs during landing or take-off. Wheel brakes shall operate smoothly and shall exhibit no undue tendency to induce nosing over. Seaplanes shall exhibit no dangerous or uncontrollable porpoising at any speed at which the airplane is normally operated on the water.

§ 03.142 *Directional stability and control.* (a) There shall be no uncontrollable looping tendency in 90° crosswinds up to a velocity equal to 0.2 V_{so} at any speed at which the aircraft may be expected to be operated upon the ground or water.

(b) All landplanes shall be demonstrated to be satisfactorily controllable with no exceptional degree of skill or alertness on the part of the pilot in power-off landings at normal landing speed and during which brakes or engine power are not used to maintain a straight path.

(c) Means shall be provided for adequate directional control during taxiing.

§ 03.143 *Shock absorption.* The shock absorbing mechanism shall not produce damage to the structure when the airplane is taxied on the roughest ground which it is reasonable to expect the airplane to encounter in normal operation.

§ 03.144 *Spray characteristics.* For seaplanes, spray during taxiing, take-off, and landing shall at no time dangerously obscure the vision of the pilots nor produce damage to the propeller or other parts of the airplane.

§ 03.15 *Flutter and vibration.* All parts of the airplane shall be demonstrated to be free from flutter and excessive vibration under all speed and power conditions appropriate to the operation of the airplane up to at least the minimum value permitted for V_d in § 03.2110. There shall also be no buffeting condition in any normal flight condition severe enough to interfere with the satisfactory control of the airplane or to cause excessive fatigue to the crew or result in structural damage. However, buffeting as stall warning is considered desirable and discouragement of this type of buffeting is not intended.

§ 03.2 *Strength requirements.*

§ 03.20 *General.*

§ 03.200 *Loads.* Strength requirements are specified in terms of limit and ultimate loads. Limit loads are the maximum loads anticipated in service. Ultimate loads are equal to the limit loads multiplied by the factor of safety. Unless otherwise described, loads specified are limit loads.

Unless otherwise provided, the specified air, ground, and water loads shall be placed in equilibrium with inertia forces, considering all items of mass in the airplane. All such loads shall be distributed in a manner conservatively approximating or closely representing actual conditions. If deflections under load would change significantly the distribution of external or internal loads, such redistribution shall be taken into account.

§ 03.201 *Factor of safety.* The factor of safety shall be 1.5 unless otherwise specified.

§ 03.202 *Strength and deformations.* The structure shall be capable of supporting limit loads without suffering detrimental permanent deformations. At all loads up to limit loads, the deformation shall be such as not to interfere with safe operation of the airplane. The structure shall be capable of supporting ultimate loads without failure for at least 3 seconds, except that when proof of strength is demonstrated by dynamic tests simulating actual conditions of load application, the 3 second limit does not apply.

§ 03.203 *Proof of structure.* Proof of compliance of the structure with the strength and deformation requirements of § 03.302 shall be made for all critical loading conditions. Proof of compliance by means of structural analysis will be accepted only when the structure conforms with types for which experience has shown such methods to be reliable. In all other cases substantiating load tests are required. In all cases certain portions of the structure must be subjected to tests as specified in § 03.3.

§ 03.21 *Flight loads.*

§ 03.210 *General.* Flight load requirements shall be complied with at critical altitudes within the range in which the airplane may be expected to operate and at all weights between the minimum design weight and the maximum design weight, with any practicable distribution of disposable load within prescribed operating limitations stated in § 03.63.

§ 03.2101 *Definition of flight load factor.* The flight load factors specified represent the acceleration component (in terms of the gravitational constant "g") normal to the assumed longitudinal axis of the airplane, and equal in magnitude and opposite in direction to the airplane inertia load factor at the center of gravity.

§ 03.211 *Symmetrical flight conditions (flaps retracted).* The strength requirements shall be met at all combinations of air speed and load factor on and within the boundaries of a pertinent V–n diagram, constructed similarly to the one shown in Figure 03–1, which represents the envelope of the flight loading conditions specified by the maneuvering and gust criteria of §§ 03.2111 and 03.2112. This diagram will also be used in determining the airplane structural operating limitations as specified in § 03.6.

§ 03.2110 *Design air speeds.* The design air speeds shall be chosen by the designer except that they shall not be less than the following values:

V_c (design cruising speed)
$=38\ \sqrt{W/S}$ (*NU*)
$=42\ \sqrt{W/S}$ (*A*)

except that for values of W/S greater than 20, the above numerical multiplying factors shall be decreased linearly with W/S to a value of 33 at W/S=100:

And further provided, That the required minimum value need be no greater than 0.9 V_h actually obtained at sea level.

V_d (design dive speed)
$=1.40\ V_{c\ min}$ (N)
$=1.50\ V_{c\ min}$ (U)
$=1.55\ V_{c\ min}$ (A)

except that for values of W/S greater than 20, the above numerical multiplying factors shall be decreased linearly with W/S to a value of 1.35 at W/S=100. ($V_{c\ min}$ is the required minimum value of design cruising speed specified above.)

V_p (design maneuvering speed)
$=V_s\sqrt{n}$ where:
V_s=a computed stalling speed with flaps fully retracted at the design weight, normally based on the maximum airplane normal force coefficient, C_{NA}.
n=limit maneuvering load factor used in design.

except that the value of V_p need not exceed the value of V_c used in design.

§ 03.2111 *Maneuvering envelope.* The airplane shall be assumed to be subjected to symmetrical maneuvers resulting in the following limit load factors, except where limited by maximum (static) lift coefficients:

(a) The positive maneuvering load factor specified in § 03.21110 at all speeds up to V_d,

(b) The negative maneuvering load factor specified in § 03.21110 at speed V_c; and factors varying linearly with speed from the specified value at V_c to 0.0 at V_d for the *N* category and −1.0 at V_d for the A and U categories.

§ 03.21110 *Maneuvering load factors.* The positive limit maneuvering load factors shall not be less than the following values (see fig. 03–2):

$$n=2.1+\frac{24{,}000}{W+10{,}000}\quad\text{Category (N)}$$

except that n need not be greater than 3.8 and shall not be less than 2.5. For airplanes certificated as characteristically incapable of spinning, n need not exceed 3.5.

n=4.4 ---------- (*U*)
n=6.0 ---------- (*A*)

The negative limit maneuvering load factors shall not be less than −0.4 times the positive load factor for the *N* and *U* categories, and shall not be less than −0.5 times the positive load factor for the *A* category.

Lower values of maneuvering load factor may be employed only if it be proven that the airplane embodies features of design which make it impossible to exceed such values in flight. (See also § 03.131)

§ 03.2112 *Gust envelope.* The airplane shall be assumed to encounter symmetrical vertical gusts as specified below while in level flight and the resulting loads shall be considered limit loads:

(a) Positive (up) and negative (down) gusts of 30 fps nominal intensity at all speeds up to V_c,

(b) Positive and negative 15 fps gusts at V_d. Gust load factors shall be assumed to vary linearly between V_c and V_d.

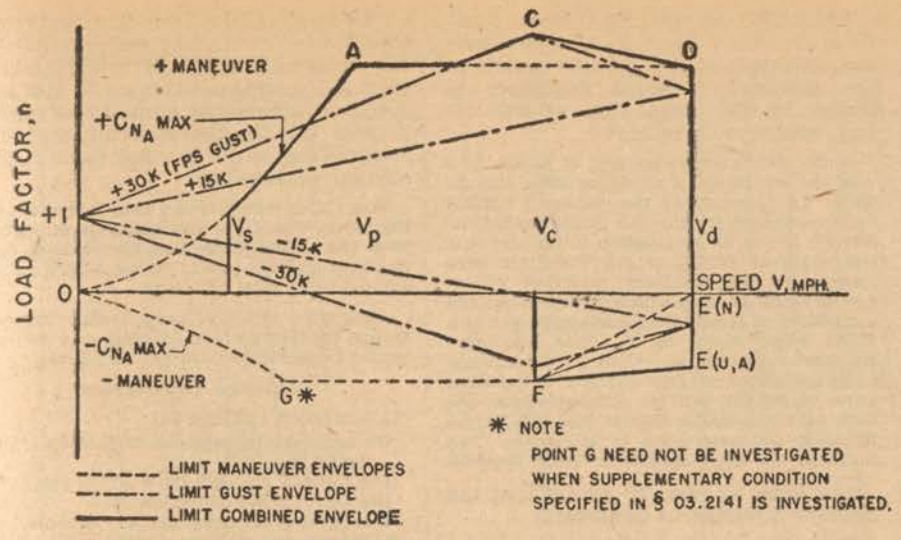


FIG. 03-1—(V-n) DIAGRAM (FLIGHT ENVELOPE)

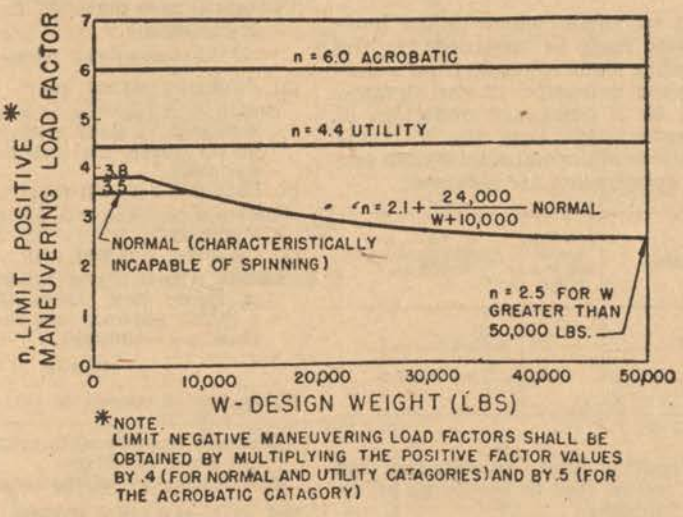


FIG. 03-2—LIMIT MANEUVERING LOAD FACTORS

§ 03.21120 *Gust load factors.* In applying the gust requirements, the gust load factors shall be computed by the following formula:

$$n = 1 + \frac{KUVm}{575\,(W/S)}$$

where: $K = \frac{1}{2}(W/S)^{1/4}$ (for $W/S < 16$ psf)

$= 1.33 - \frac{2.67}{(W/S)^{1/4}}$ (for $W/S > 16$ psf)

U = nominal gust velocity, fps. (Note that the "effective sharp edged gust" equals KU.)

V = airplane speed, mph.

m = slope of lift curve, C_L per radian, corrected for aspect ratio.

W/S = wing loading, psf.

§ 03.2113 *Airplane equilibrium.* In determining the wing loads and linear inertia loads corresponding to any of the above specified flight conditions, the appropriate balancing horizontal tail load (see § 03.2211) shall be taken into account in a rational or conservative manner.

Incremental horizontal tail loads due to maneuvering and gusts (see §§ 03.2212 and 03.2213) shall be reacted by angular inertia of the complete airplane in a rational or conservative manner.

§ 03.212 *Flaps extended flight conditions.* When flaps or similar high lift devices intended for use at the relatively low air speeds of approach, landing, and take-off are installed, the airplane shall be assumed to be subjected to symmetrical maneuvers and gusts with the flaps fully deflected at the design flap speed V_f resulting in limit load factors within the range determined by the following conditions:

(a) Maneuvering, to a positive limit load factor of 2.0.

(b) Positive and negative 15 fps gusts acting normal to the flight path in level flight. The gust load factors shall be computed by the formula of § 03.21120.

V_f shall be assumed not less than 1.4 V_s or 1.8 V_{sf}, whichever is greater, where:

V_s = the computed stalling speed with flaps fully retracted at the design weight.

V_{sf} = the computed stalling speed with flaps fully extended at the design weight.

except that, when an automatic flap load limiting device is employed, the airplane may be designed for critical combinations of air speed and flap position permitted by the device. (See also § 03.353.)

In designing the flaps and supporting structure, slipstream effects shall be taken into account as specified in § 03.224.

NOTE: In determining the external loads on the airplane as a whole, the thrust, slipstream, and pitching acceleration may be assumed equal to zero.

§ 03.213 *Unsymmetrical flight conditions.* The airplane shall be assumed to be subjected to rolling and yawing maneuvers as described in the following conditions. Unbalanced aerodynamic moments about the center of gravity shall be reacted in a rational or conservative manner considering the principal masses furnishing the reacting inertia forces.

§ 03.2131 *Rolling conditions.* The airplane shall be designed for (a) unsymmetrical wing loads appropriate to the category, and (b) the loads resulting from the aileron deflections and speeds specified in § 03.223, in combination with an airplane load factor of at least two-thirds of the positive maneuvering factor used in the design of the airplane.

NOTE: These conditions may be covered as noted below.

(a) Rolling accelerations may be obtained by modifying the symmetrical flight conditions shown in Figure 03-1 as follows:

(1) *Acrobatic category.* In conditions A and F, assume 100% of the wing air load acting on one side of the plane of symmetry and 60% on the other.

(2) *Normal and utility categories.* In condition A, assume 100% of the wing air load acting on one side of the airplane and 70% on the other. For airplanes over 1,000 lbs. design weight, the latter percentage may be increased linearly with weight up to 80% at 25,000 lbs.

(b) The effect of aileron displacement on wing torsion may be accounted for by adding the following increment to the basic airfoil moment coefficient over the aileron portion of the span in the critical condition as determined by the note under § 03.223.

$$\Delta_{cm} = -.01\delta$$

where:

Δ_{cm} = moment coefficient increment

δ = down aileron deflection in degrees in critical condition

Only the wing and wing bracing need be investigated for this condition.

§ 03.2132 *Yawing conditions.* The airplane shall be designed for the yawing loads resulting from the vertical surface loads specified in § 03.222.

§ 03.214 *Supplementary conditions.*

§ 03.2141 *Special condition for rear lift truss.* When a rear lift truss is employed, it shall be designed for conditions of reversed airflow at a design speed of:

$$V = 10\sqrt{W/S} + 10 \text{ (mph)}$$

NOTE: It may be assumed that the value of C_L is equal to -0.8 and the chordwise distribution is triangular between a peak at the trailing edge and zero at the leading edge.

§ 03.2142 *Engine torque effects.* Engine mounts and their supporting structures shall be designed for engine torque effects combined with certain basic flight conditions as described in paragraphs (a) and (b) of this section. Engine

torque may be neglected in the other flight conditions.

(a) The limit torque corresponding to take-off power and propeller speed acting simultaneously with 75 percent of the limit loads from flight condition A. (See figure 03–1.)

(b) The limit torque corresponding to maximum continuous power and propeller speed, acting simultaneously with the limit loads from flight condition A. (See figure 03–1.)

The limit torque shall be obtained by multiplying the mean torque by a factor of 1.33 in the case of engines having 5 or more cylinders. For 4, 3, and 2 cylinder engines, the factors shall be 2, 3, and 4, respectively.

§ 03.2143 *Side load on engine mount.* The limit load factor in a lateral direction for this condition shall be at least equal to ⅓ of the limit load factor for flight condition A (see figure 03–1) except that it shall not be less than 1.33. Engine mounts and their supporting structure shall be designed for this condition which may be assumed independent of other flight conditions.

§ 03.22 *Control surface loads.*

§ 03.220 *General.* The control surface loads specified in the following sections shall be assumed to occur in the symmetrical and unsymmetrical flight conditions as described in §§ 03.2113, 03.212, and 03.213. See figures 03–3 to 03–10 for acceptable values of control surface loadings which are considered as conforming to the following detailed rational requirements.

§ 03.2201 *Pilot effort.* In the control surface loading conditions described, the airloads on the movable surfaces and the corresponding deflections need not exceed those which could be obtained in flight by employing the maximum pilot control forces specified in figure 03–11. In applying this criterion, proper consideration shall be given to the effects of control system boost and serve mechanisms, tabs, and automatic pilot systems in assisting the pilot.

§ 03.2202 *Trim tab effects.* The effects of trim tabs on the control surface design conditions need be taken into account only in cases where the surface loads are limited on the basis of maximum pilot effort. In such cases the tabs shall be considered to be deflected in the direction which would assist the pilot and the deflection shall correspond to the maximum expected degree of "out of trim" at the speed for the condition under consideration.

§ 03.221 *Horizontal tail surfaces.* The horizontal tail surfaces shall be designed for the following conditions.

§ 03.2211 *Balancing loads.* A horizontal tail balancing load is defined as that necessary to maintain the airplane in equilibrium in a specified flight condition with zero pitching acceleration. The horizontal tail surfaces shall be designed for the balancing loads occurring at any point on the limit maneuvering envelope, figure 03–1, and in the flap conditions. (See § 03.212.)

NOTE: The distribution of Figure 03–7 may be used.

§ 03.2212 *Maneuvering loads.* (a) At maneuvering speed V_p assume a sudden deflection of the elevator control to the maximum upward deflection as limited by the control stops or pilot effort, whichever is critical.

NOTE: The average loading of figure 03–3 and the distribution of figure 03–8 may be used. In determining the resultant normal force coefficient for the tail under these conditions, it will be permissible to assume that the angle of attack of the stabilizer with respect to the resultant direction of air flow is equal to that which occurs when the airplane is in steady unaccelerated flight at a flight speed equal to V_p. The maximum elevator deflection can then be determined from the above criteria and the tail normal force coefficient can be obtained from the data given in NACA Report No. 688, "Aerodynamic Characteristics of Horizontal Tail Surfaces," or other applicable NACA Reports.

(b) Same as case (a) except that the elevator deflection is downward.

NOTE: The average loading of Figure 03–3 and the distribution of Figure 03–8 may be used.

(c) At all speeds above V_p the horizontal tail shall be designed for the maneuvering loads resulting from a sudden upward deflection of the elevator, followed by a downward deflection of the elevator such that the following combinations of normal acceleration and angular acceleration are obtained:

Condition	Airplane normal acceleration n	Angular acceleration Radian/sec^2
Down load	1.0	$+\frac{45}{V} n_m (n_m - 1.5)$
Up load	n_m	$-\frac{45}{V} n_m (n_m - 1.5)$

where:

n_m = positive limit maneuvering load factor used in the design of the airplane.

V = initial speed in mph.

The total tail load for the conditions specified in (c) shall be the sum of: (1) The balancing tail load corresponding with the condition at speed V and the specified value of the normal load factor n, plus (2) the maneuvering load increment due to the specified value of the angular acceleration.

NOTE: The maneuvering load increment of Figure 03–4 and the distributions of Figure 03–8 (for downloads) and Figure 03–9 (for uploads) may be used. These distributions apply to the total tail load.

Acceptable values of limit average maneuvering control surface loadings can be obtained from Figure 03–3 (b) as follows:

Horizontal Tail Surfaces

(1) Condition § 03.2212 (a):
Obtain $\overline{w}$ as function of W/S and surface deflection;
Use Curve C for deflection 10° or less;
Use Curve B for deflection 20°;
Use Curve A for deflection 30° or more;
(Interpolate for other deflections);
Use distribution of Figure 03–8.

(2) Condition § 03.2212 (b):
Obtain $\overline{w}$ from Curve B. Use distribution of Figure 03–8.

Vertical Tail Surfaces

(3) Condition § 03.2221 (a):
Obtain $\overline{w}$ as function of W/S and surface deflection in same manner as outlined in (1) above, use distribution of Figure 03–8;

(4) Condition § 03.2221 (b):
Obtain $\overline{w}$ from Curve C, use distribution of Figure 03–7;

(5) Condition § 03.2221 (c):
Obtain $\overline{w}$ from Curve A, use distribution of Figure 03–9. (Note that condition § 03.2222 generally will be more critical than this condition).

Ailerons

(6) In lieu of conditions (a), (b), and (c) of § 03.223:
Obtain $\overline{w}$ from Curve B, acting in both up and down directions.
Use distribution of Figure 03–10.

FIG. 03–3 (A). LIMIT AVERAGE MANEUVERING CONTROL SURFACE LOADINGS

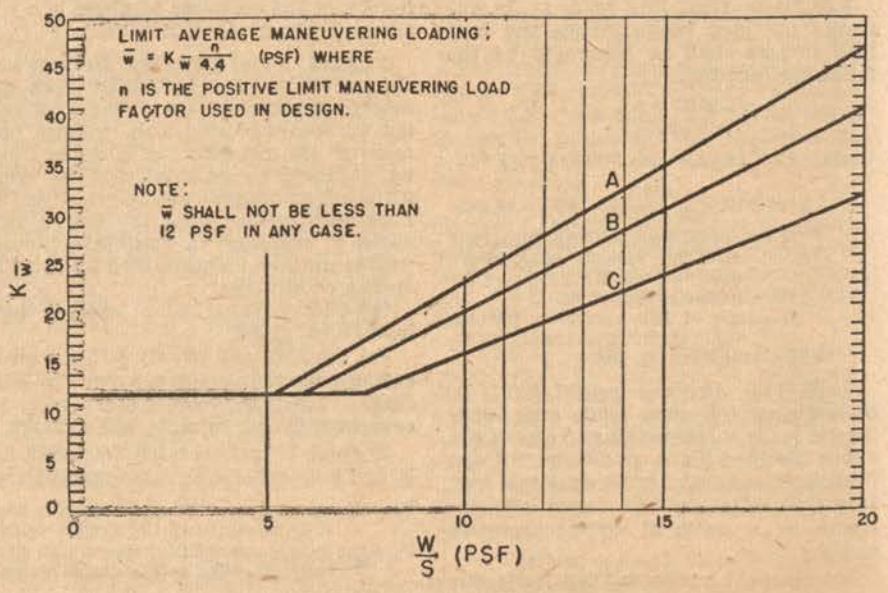


FIG. 03-3(b)—LIMIT AVERAGE MANEUVERING CONTROL SURFACE LOADING

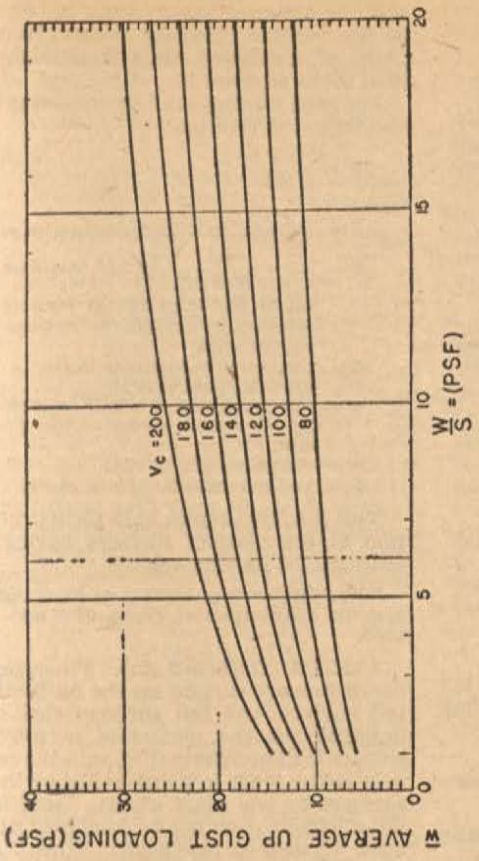


FIG. 03-5(b) — UP GUST LOADING ON HORIZONTAL TAIL SURFACE

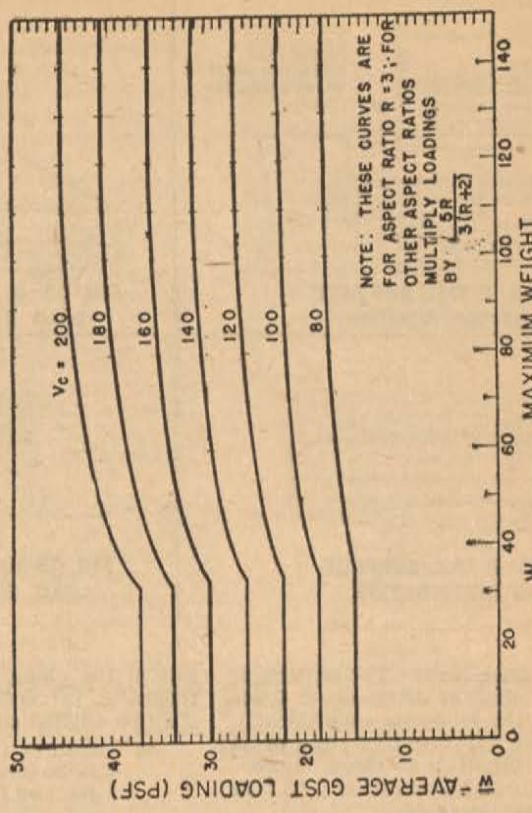


FIG. 03-6 — GUST LOADING ON VERTICAL TAIL SURFACE

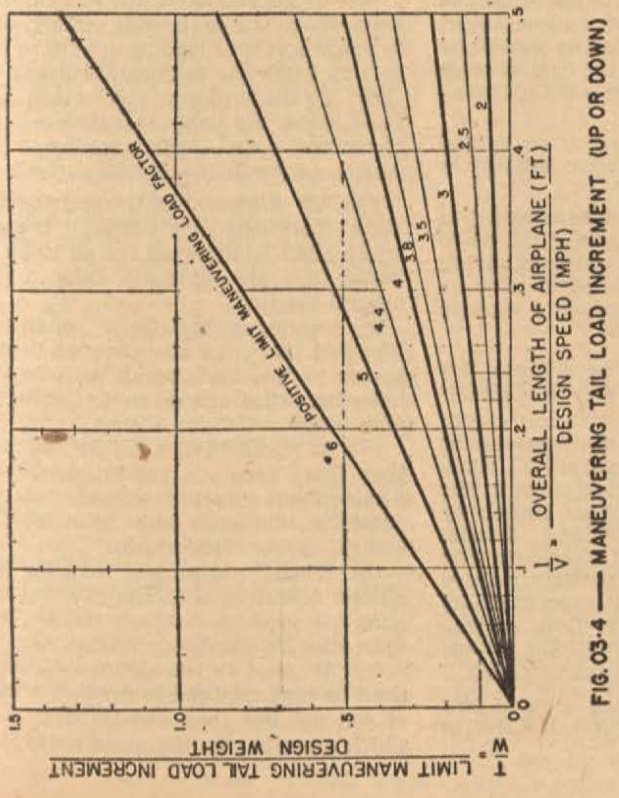


FIG. 03-4 — MANEUVERING TAIL LOAD INCREMENT (UP OR DOWN)

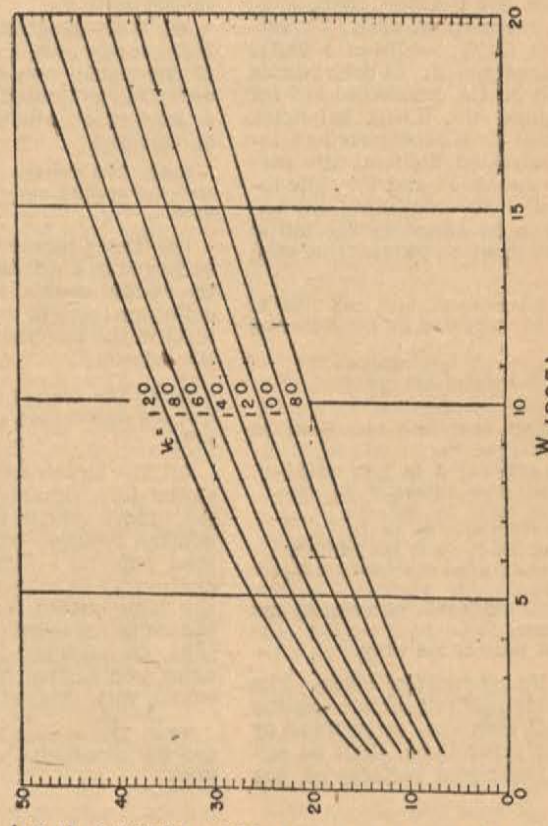
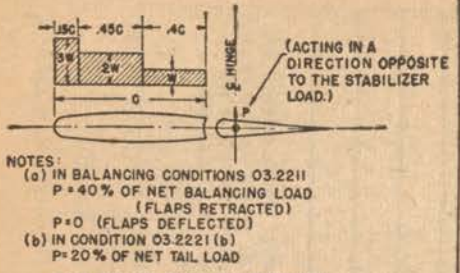


FIG. 03-5(a) — DOWN GUST LOADING ON HORIZONTAL TAIL SURFACE



NOTES:
(a) IN BALANCING CONDITIONS 03.2211
P = 40% OF NET BALANCING LOAD (FLAPS RETRACTED)
P = 0 (FLAPS DEFLECTED)
(b) IN CONDITION 03.2221 (b)
P = 20% OF NET TAIL LOAD

FIG. 03-7 TAIL SURFACE LOAD DISTRIBUTION

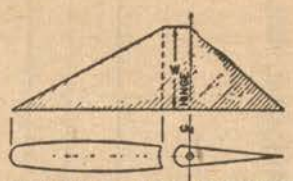


FIG. 03-8 TAIL SURFACE LOAD DISTRIBUTION

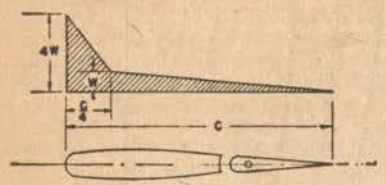


FIG. 03-9 TAIL SURFACE LOAD DISTRIBUTION

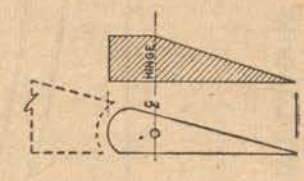


FIG. 03-10 AILERON LOAD DISTRIBUTION

§ 03.2213 *Gust loads.* The horizontal tail surfaces shall be designed for loads occurring in the following conditions:

(a) Positive and negative gusts of 30 fps nominal intensity at speed V_c, corresponding to flight condition § 03.2112 (a) with flaps retracted.

NOTE: The average loadings of Figures 03-5 (a) and 03-5 (b) and the distribution of Figure 03-9 may be used for the total tail loading in this condition.

(b) Positive and negative gusts of 15 fps nominal intensity at speed V_f, corresponding to flight condition § 03.212 (b) with flaps extended. In determining the total load on the horizontal tail for these conditions, the initial balancing tail loads shall first be determined for steady unaccelerated flight at the pertinent design speeds V_c and V_f. The incremental tail load resulting from the gust shall then be added to the initial balancing tail load to obtain the total tail load.

NOTE: The incremental tail load due to the gust may be computed by the following formula:

$$\Delta t = 0.1\ K\ U\ V\ S_t a_t \left(1 - \frac{36 a_w}{R_w}\right)$$

where:

Δt = the limit gust load increment on the tail in lbs.
K = gust coefficient K in § 03.21120,
U = nominal gust intensity in fps,
V = airplane speed in mph,
S_t = tail surface area in sq. ft.,
a_t = slope of lift curve of tail surface, C_L per degree, corrected for aspect ratio,
a_w = slope of lift curve of wing, C_L per degree,
R_w = aspect ratio of the wing.

§ 03.2214 *Unsymmetrical loads.* The maximum horizontal tail surface loading (load per unit area), as determined by the preceding subsections, shall be applied to the horizontal surfaces on one side of the plane of symmetry and the following percentage of that loading shall be applied on the opposite side:

% = 100–10 (n–1) where:
n is the specified positive maneuvering load factor.

In any case the above value shall not be greater than 80 percent.

§ 03.222 *Vertical tail surfaces.*

§ 03.2221 *Maneuvering loads.* At all speeds up to V_D:

(a) With the airplane in unaccelerated flight at zero yaw, a sudden displacement of the rudder control to the maximum deflection as limited by the control stops or pilot effort, whichever is critical, shall be assumed.

NOTE: The average loading of Figure 03-3 and the distribution of Figure 03-8 may be used.

(b) The airplane shall be assumed to be yawed to a sideslip angle of 15°, while the rudder control is maintained at full deflection (except as limited by pilot effort) in the direction tending to increase the sideslip.

NOTE: The average loading of Figure 03-3 and the distribution of Figure 03-7 may be used.

(c) The airplane shall be assumed to be yawed to a sideslip angle of 15°, while the rudder control is maintained in the neutral position (except as limited by pilot effort). The assumed sideslip angles may be reduced if it is shown that the value chosen for a particular speed cannot be exceeded in the cases of steady slips, uncoordinated rolls from a steep bank, and sudden failure of the critical engine with delayed corrective action.

NOTE: The average loading of Figure 03-3 and the distribution of Figure 03-9 may be used.

§ 03.2222 *Gust loads.* The airplane shall be assumed to encounter a gust of 30 fps nominal intensity, normal to the plane of symmetry while in unaccelerated flight at speed V_c.

The gust loading shall be computed by the following formula:

$$\overline{w} = \frac{K\ U\ V\ m}{575}$$

where:

$\overline{w}$ = average limit unit pressure in psf,
$K = 1.33 - \dfrac{4.5}{(W/S_v)^{3/4}}$, except that K shall not be less than 1.0. A value of K obtained by rational determination may be used.
U = nominal gust intensity in fps,
V = airplane speed in mph,
m = slope of lift curve of vertical surface, C_L per radian, corrected for aspect ratio,
W = design weight in lbs.,
S_v = vertical surface area in sq. ft.

This loading applies only to that portion of the vertical surfaces having a well-defined leading edge:

NOTE: The average loading of Figure 03-6 and the distribution of Figure 03-9 may be used.

§ 03.2223 *Outboard fins.* When outboard fins are carried on the horizontal tail surface, the tail surfaces shall be designed for the maximum horizontal surface load in combination with the corresponding loads induced on the vertical surfaces by end plate effects. Such induced effects need not be combined with other vertical surface loads. When outboard fins extend above and below the horizontal surface, the critical vertical surface loading (load per unit area) as determined by § 03.222 shall be applied:

(a) To the portion of the vertical surfaces above the horizontal surface, and 80 percent of that loading applied to the portion below the horizontal surface,

(b) To the portion of the vertical surfaces below the horizontal surface, and 80 percent of that loading applied to the portion above the horizontal surface.

§ 03.223 *Ailerons.* In the symmetrical flight conditions (see § 03.211), the ailerons shall be designed for all loads to which they are subjected while in the neutral position.

In unsymmetrical flight conditions (see § 03.2131), the ailerons shall be designed for the loads resulting from the following deflections except as limited by pilot effort:

(a) At speed V_D it shall be assumed that there occurs a sudden maximum displacement of the aileron control. (Suitable allowance may be made for control system deflections).

(b) When V_c is greater than V_D, the aileron deflection at V_c shall be that required to produce a rate of roll not less than that obtained in condition (a).

(c) At speed V_d the aileron deflection shall be that required to produce a rate of roll not less than one-third of that which would be obtained at the speed and

aileron deflection specified in condition (a).

NOTE: For conventional ailerons, the deflections for conditions (b) and (c) may be computed from:

$$\delta_2=\frac{V_p}{V_c}\delta_1; \qquad \text{and } \delta_3=\frac{0.5\,V_p}{V_d}\delta_1;$$

where:

δ_1 = total aileron deflection (sum of both aileron deflections in condition (a).

δ_2 = total aileron deflection in condition (b).

δ_3 = total deflection in condition (c). In the equation for δ_3, the 0.5 factor is used instead of 0.33 to allow for wing torsional flexibility.

The critical loading on the ailerons should occur in condition (b) if V_d is less than $2V_c$ and the wing meets the torsional stiffness criteria. The normal force coefficient C_N for the ailerons may be taken as 0.04δ, where δ is the deflection of the individual aileron in degrees. The critical condition for wing torsional loads will depend upon the basic airfoil moment coefficient as well as the speed, and may be determined as follows:

$$\frac{T_3}{T_2}=\frac{(C_m-.01\delta_{3_1})V_d^2}{(C_m-.01\delta_{2_1})V_c^2}$$

where:

T_3/T_2 is the ratio of wing torsion in condition (c) to that in condition (b)

δ_{2_1} and δ_{3_1} are the down deflections of the aileron in conditions (b) and (c) respectively.

When T_3/T_2 is greater than 1.0 condition (c) is critical; when T_3/T_2 is less than 1.0 condition (b) is critical.

In lieu of the above rational conditions the average loading of figure 03–3 and the distribution of figure 03–10 may be used.

§ 03.224 *Wing flaps.* Wing flaps, their operating mechanism, and supporting structure shall be designed for critical loads occurring in the flap extended flight conditions (see § 03.212) with the flaps extended to any position from fully retracted to fully extended; except that when an automatic flap load limiting device is employed these parts may be designed for critical combinations of airspeed and flap position permitted by the device. (Also see § 03.353.) The effects of propeller slipstream corresponding to take-off power shall be taken into account at an airplane speed of not less than 1.4 V_s where V_s is the computed stalling speed with flaps fully retracted at the design weight. For investigation of the slipstream condition, the airplane load factor may be assumed to be 1.0.

§ 03.225 *Tabs.* Control surface tabs shall be designed for the most severe combination of air speed and tab deflection likely to be obtained within the limit V–n diagram (Figure 03–1) for any usable loading condition of the airplane.

§ 03.226 *Special devices.* The loading for special devices employing aerodynamic surfaces, such as slots and spoilers, shall be based on test data.

§ 03.23 *Control system loads.*

§ 03.230 *Primary flight controls and systems.* Flight control systems and supporting structures shall be designed for loads corresponding to 125 percent of the computed hinge moments of the movable control surface in the conditions prescribed in § 03.22, subject to the following maxima and minima:

(a) The system limit loads need not exceed those which can be produced by the pilot and automatic devices operating the controls.

(b) The loads shall in any case be sufficient to provide a rugged system for service use, including consideration of jamming, ground gusts, taxiing tail to wind, control inertia, and friction.

Acceptable maximum and minimum pilot loads for elevator, aileron, and rudder controls are shown in Figure 03–11. These pilot loads shall be assumed to act at the appropriate control grips or pads in a manner simulating flight conditions and to be reacted at the attachments of the control system to the control surface horn.

§ 03.2300 *Dual controls.* When dual controls are provided, the systems shall be designed for the pilots operating in opposition, using individual pilot loads equal to 75 percent of those obtained in accordance with § 03.230, except that the individual pilot loads shall not be less than the minimum loads specified in Figure 03–11.

§ 03.231 *Ground gust conditions.* The following ground gust conditions shall be investigated in cases where a deviation from the specific values for minimum control forces listed in Figure 03–11 is applicable. The following conditions are intended to simulate the loadings on control surfaces due to ground gusts and when taxiing with the wind.

The limit hinge moment H shall be obtained from the following formula:

$$H=K\,c\,S\,q$$

where:

H = limit hinge moment (ft.-lb.).

c = mean chord of the control surface aft of the hinge line (ft.),

S = area of control surface aft of the hinge line (sq. ft.),

q = dynamic pressure (psf) to be based on a design speed not less than $10\sqrt{W/S}+10$ mph, except that the design speed need not exceed 60 mph,

K = factor as specified below:

	Surface	*K*	*Remarks*
(a)	Aileron	+0.75	Control column locked or lashed in mid-position.
(b)	Aileron	±0.50	Ailerons at full throw; + moment on one aileron, − moment on the other.
(c) (d)	Elevator	±0.75	Elevator (c) full up (−), and (d) full down (+).
(e) (f)	Rudder	+0.75	Rudder (e) in neutral, and (f) at full throw.

As used above in connection with ailerons and elevators, a positive value of K indicates a moment tending to depress the surface while a negative value of K indicates a moment tending to raise the surface.

LIMIT PILOT LOADS

Control	Maximum loads for design weight W equal to or less than 5,000 lbs.[1]	Minimum loads [2]
Aileron:		
Stick	67 pounds	40 pounds.
Wheel [3]	53 D in-pounds [4]	40 D in-pounds.[4]
Elevator:		
Stick	167 pounds	160 pounds.
Wheel	200 pounds	100 pounds.
Rudder	200 pounds	120 pounds.

[1] For design weight W greater than 5,000 pounds the above specified maximum values shall be increased linearly with weight to 1.5 times the specified values at a design weight of 25,000 pounds.

[2] If the design of any individual set of control systems or surfaces is such as to make these specified minimum loads inapplicable, values corresponding to the pertinent hinge moments obtained according to § 03.231 may be used instead except that in any case values less than 0.6 of the specified minimum loads shall not be employed.

[3] The critical portions of the aileron control system shall also be designed for a single tangential force having a limit value equal to 1.25 times the couple force determined from the above criteria.

[4] D = wheel diameter.

FIG. 03–11—PILOT CONTROL FORCE LIMITS

§ 03.232 *Secondary controls and systems.* Secondary controls, such as wheel brakes, spoilers, and tab controls, shall be designed for the loads based on the maximum which a pilot is likely to apply to the control in question.

§ 03.24 *Ground loads.* The loads specified in the following conditions shall be considered as the external loads and inertia forces which would occur in an airplane structure if it were acting as a rigid body. In each of the ground load conditions specified the external reactions shall be placed in equilibrium with the linear and angular inertia forces in a rational or conservative manner.

§ 03.240 *Design weight.* The design weight used in the landing conditions shall not be less than the maximum weight for which certification is desired: *Provided, however,* That for multiengine airplanes meeting the one-engine-inoperative climb requirement of § 03.123 (b), the airplane may be designed for a design landing weight which is less than the maximum design weight, if compliance is shown with the following sections of Part 04 in lieu of the corresponding requirements of this part: the ground load requirements of § 04.24, and shock absorption requirements of § 04.361 and its related sections, the wheel and tire requirements of §§ 04.363 and 04.364, and the fuel jettisoning system requirements of § 04.428.

§ 03.241 *Load factor for landing conditions.* In the following landing conditions the limit vertical inertia load factor at the center of gravity of the airplane shall be chosen by the designer but shall not be less than the value which would be obtained when landing the air-

plane with a descent velocity, in fps, equal to the following value:

$V = 4.4\ (W/S)^{1/4}$

except that the descent velocity need not exceed 10 fps and shall not be less than 7 fps. Wing lift not exceeding 2/3 of the weight of the airplane may be assumed to exist throughout the landing impact and may be assumed to act through the airplane c. g. When such wing lift is assumed, the ground reaction load factor may be taken equal to the inertia load factor minus the ratio of the assumed wing lift to the airplane weight. (See § 03.3612 for requirements concerning the energy absorption tests which determine the limit load factor corresponding to the required limit descent velocities.) In no case, however, shall the inertia load factor used for design purposes be less than 2.67, nor shall the limit ground reaction load factor be less than 2.0, unless it is demonstrated that lower values of limit load factor will not be exceeded in taxiing the airplane over terrain having the maximum degree of roughness to be expected under intended service use at all speeds up to take-off speed.

§ 03.242 *Landing cases and attitudes.* For conventional arrangements of main and nose, or main and tail wheels, the airplane shall be assumed to contact the ground at the specified limit vertical velocity in the following attitudes. (See Figures 03–12 (a) and 03–12 (b) for acceptable landing conditions which are considered to conform with the following.)

§ 03.2421 *Level landing*—(a) *Tail wheel type.* Normal level flight attitude.

(b) *Nose wheel type.* Two cases shall be considered:

(1) Nose and main wheels contacting the ground simultaneously,

(2) Main wheels contacting the ground, nose wheel just clear of the ground. (The angular attitude may be assumed the same as in (1) for purposes of analysis.)

In this condition, drag components simulating the forces required to accelerate the tires and wheels up to the landing speed shall be properly combined with the corresponding instantaneous vertical ground reactions. The wheel spin-up drag loads may be based on vertical ground reactions assuming wing lift and a tire-sliding coefficient of friction of 0.8, but in any case the drag loads shall not be less than 25 percent of the maximum vertical ground reactions neglecting wing lift.

§ 03.2422 *Tail down*—(a) *Tail wheel type.* Main and tail wheels contacting ground simultaneously.

(b) *Nose wheel type.* Stalling attitude or the maximum angle permitting clearance of the ground by all parts of the airplane, whichever is the lesser.

In this condition, it shall be assumed that the ground reactions are vertical, the wheels having been brought up to speed before the maximum vertical load is attained.

§ 03.2423 *One wheel landing.* One side of the main gear shall contact the ground with the airplane in the level attitude. The ground reactions shall be the same as those obtained on the one side in the level attitude. (See § 03.2421.)

§ 03.243 *Ground roll conditions.*

§ 03.2431 *Braked roll.* The limit vertical load factor shall be 1.33. The attitude and ground contacts shall be those described for level landings in § 03.2421, with the shock absorbers and tires deflected to their static positions. A drag reaction equal to the vertical reaction at the wheel multiplied by a coefficient of friction of 0.8 shall be applied at the ground contact point of each wheel having brakes, except that the drag reaction need not exceed the maximum value based on limiting brake torque.

Condition	Tail wheel type		Nose wheel type		
	Level landing	Tail down landing	Level landing with inclined reactions	Level landing with nose wheel just clear of ground	Tail down landing
Reference section	§ 03.2421 (a)	§ 03.2422(a)	§ 03.2421 (b)(1)	§ 03.2421 (b)(2)	§ 03.2422(b)
Vertical component at *cg*	nW	nW	nW	nW	nW
Fore and aft component at *cg*	KnW	0	KnW	KnW	0
Lateral component in either direction at *cg*	0	0	0	0	0
Shock absorber extension (hydraulic shock absorber)	Note (2)	Note (2)	Note (2)	Note (2)	Note (2)
Shock absorber deflection (rubber or spring shock absorber)	100% Static	100% Static	100% Static	100% Static	100% Static
Tire deflection					
Main wheel loads (both wheels) V_r	nW	nW b/d	nW b'/d'	nW	nW
Main wheel loads (both wheels) D_r	KV_r	-0	KV_r	KV_r	0
Tail (nose) wheel loads V_f	0	nW a/d	nW a'/d'	0	0
Tail (nose) wheel loads D_f	0	0	KV_f	0	0
Notes	1 and 3		1	1 and 3	3

NOTE (1).—K may be determined as follows: $K = 0.25$ for $W = 3{,}000$ pounds or less; $K = 0.33$ for $W = 6{,}000$ pounds or greater, with linear variation of K between these weights.

NOTE (2).—For the purpose of design, the maximum load factor shall be assumed to occur throughout the shock absorber stroke from 25 percent deflection to 100 percent deflection unless demonstrated otherwise, and the load factor shall be used with whatever shock absorber extension is most critical for each element of the landing gear.

NOTE (3).—Unbalanced moments shall be balanced by a rational or conservative method.

FIG. 03-12 (a)—BASIC LANDING CONDITIONS

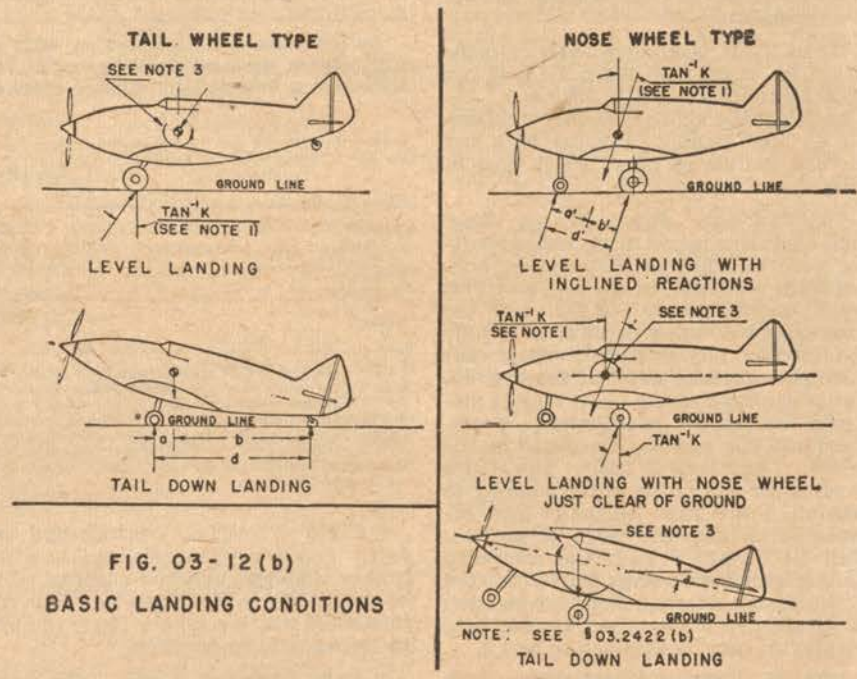


FIG. 03-12 (b)

BASIC LANDING CONDITIONS

§ 03.2432 *Side load.* Level atttiude with main wheels only contacting the ground, with the shock absorbers and tires deflected to their static positions. The limit vertical load factor shall be 1.33 with the vertical ground reaction divided equally between main wheels. The limit side inertia factor shall be 0.83 with the side ground reaction divided between main wheels as follows:

0.5W acting inboard on one side.

0.33W acting outboard on the other side.

§ 03.244 *Supplementary conditions for tail wheels.* The following conditions apply to tail wheels and affected supporting structure.

§ 03.2441 *Obstruction load.* The limit ground reaction obtained in the tail down landing condition shall be assumed to act up and aft through the axle at 45°. The shock absorber and tire may be assumed deflected to their static positions.

§ 03.2442 *Side load.* A limit vertical ground reaction equal to the static load on the tail wheel, in combination with a side component of equal magnitude. When a swivel is provided, the tail wheel

shall be assumed swiveled 90° to the airplane longitudinal axis, the resultant ground load passing through the axle. When a lock steering device or shimmy damper is provided, the tail wheel shall also be assumed in the trailing position with the side load acting at the ground contact point. The shock absorber and tire shall be assumed deflected to their static positions.

§ 03.245 *Supplementary conditions for nose wheels.* The following conditions apply to nose wheels and affected supporting structure. The shock absorbers and tires shall be assumed deflected to their static positions.

§ 03.2451 *Aft load.* Limit force components at axle:

Vertical 2.25 times static load on wheel,
Drag 0.8 times vertical load.

§ 03.2452 *Forward load.* Limit force components at axle:

Vertical 2.25 times static load on wheel,
Forward 0.4 times vertical load.

§ 03.2453 *Side load.* Limit force components at ground contact:

Vertical 2.25 times static load on wheel,
Side 0.7 times vertical load.

§ 03.246 *Supplementary conditions for skiplanes.* The airplane shall be assumed resting on the ground with one main ski frozen in the snow and the other main ski and the tail ski free to slide. A limit side force equal to $P/3$ shall be applied at the most convenient point near the tail assembly, where P is the static ground reaction on the tail ski. For this condition the factor of safety shall be assumed equal to 1.0.

§ 03.25 *Water loads.* The following requirements shall apply to the entire airplane, but have particular reference to hull structure, wing, nacelles, and float supporting structure.

§ 03.250 *Design weight.* The design weight used in the water landing conditions shall not be less than the maximum weight for which certification is desired for any operation.

§ 03.251 *Boat seaplanes.*

§ 03.2510 *Local bottom pressures*—(a) *Maximum local pressure.* The maximum value of the limit local pressure shall be determined from the following equation:

$$P_{max}=0.55\ V_{s0}^{1.4}\ (1+\frac{W}{50{,}000})0.25$$

where

P=pressure in psi.
V_{s0}=stalling speed, flaps down, power off, in mph (To be calculated on the basis of wind tunnel data or flight tests on previous airplanes.)
W=design weight.

(b) *Variation in local pressure.* The local pressures to be applied to the hull bottom shall vary in accordance with figure 03-13. No variation from keel to chine (beamwise) shall be assumed, except when the chine flare indicates the advisability of higher pressures at the chine.

(c) *Application of local pressure.* The local pressures determined in (a) and (b) shall be applied over a local area in such a manner as to cause the maximum local loads in the hull bottom structure.

§ 03.2511 *Distributed bottom pressures.* (a) For the purpose of designing frames, keels, and chine structure, the limit pressures obtained from § 03.2510 and figure 03-13 shall be reduced to ½ the local values and simultaneously applied over the entire hull bottom. The loads so obtained shall be carried into the side-wall structure of the hull proper, but need not be transmitted in a fore-and-aft direction as shear and bending loads.

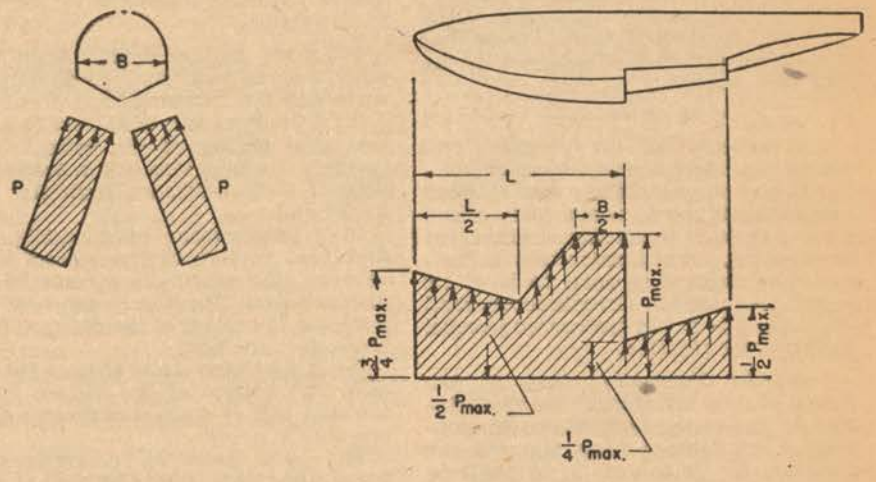


FIG. 03-13 DISTRIBUTION OF LOCAL PRESSURES (BOAT SEAPLANES)

(b) *Unsymmetrical loading.* Each floor member or frame shall be designed for a load on one side of the hull center line equal to the most critical symmetrical loading, combined with a load on the other side of the hull center line equal to ½ of the most critical symmetrical loading.

§ 03.2512 *Step loading condition*—(a) *Application of load.* The resultant water load shall be applied vertically in the plane of symmetry so as to pass through the center of gravity of the airplane.

(b) *Acceleration.* The limit acceleration shall be 4.33.

(c) *Hull shear and bending loads.* The hull shear and bending loads shall be computed from the inertia loads produced by the vertical water load. To avoid excessive local shear loads and bending moments near the point of water load application, the water load may be distributed over the hull bottom, using pressures not less than those specified in § 03.2511.

§ 03.2513 *Bow loading condition*—(a) *Application of load.* The resultant water load shall be applied in the plane of symmetry at a point 1/10 of the distance from the bow to the step and shall be directed upward and rearward at an angle of 30° from the vertical.

(b) *Magnitude of load.* The magnitude of the limit resultant water load shall be determined from the following equation:

$$P_b=\frac{n_z W_e}{2}$$

Where:

P_b = the load in lbs.
n_z = the step landing load factor
W_e = an effective weight which is assumed equal to ½ the design weight of the airplane.

(c) *Hull shear and bending loads.* The hull shear and bending loads shall be determined by proper consideration of the inertia loads which resist the linear and angular accelerations involved. To avoid excessive local shear loads, the water reaction may be distributed over the hull bottom, using pressures not less than those specified in § 03.2511.

§ 03.2514 *Stern loading condition*—(a) *Application of load.* The resultant water load shall be applied vertically in the plane of symmetry and shall be distributed over the hull bottom from the second step forward with an intensity equal to the pressures specified in § 03.251.

(b) *Magnitude of load.* The limit resultant load shall equal ¾ of the maximum design weight of the airplane.

(c) *Hull shear and bending loads.* The hull shear and bending loads shall be determined by assuming the hull structure to be supported at the wing attachment fittings and neglecting internal inertia loads. This condition need not be applied to the fittings or to the portion of the hull ahead of the rear attachment fittings.

§ 03.2515 *Side loading condition*—(a) *Application of load.* The resultant water load shall be applied in a vertical plane through the center of gravity. The vertical component shall be assumed to act in the plane of symmetry and horizontal component at a point half-way between the bottom of the keel and the load waterline at design weight (at rest).

(b) *Magnitude of load.* The limit vertical component of acceleration shall be 3.25 and the side component shall be equal to 15 percent of the vertical component.

(c) *Hull shear and bending loads.* The hull shear and bending loads shall be determined by proper consideration of the inertia loads or by introducing couples at the wing attachment points. To avoid excessive local shear loads, the water reaction may be distributed over the hull bottom, using pressures not less than those specified by § 03.2511.

§ 03.252 *Float seaplanes.*

§ 03.2520 *Landing with inclined reactions.* The vertical component of the limit load factor shall be 4.2 except that it need not exceed a value given by the following formula:

$$n=3.0+0.133\ (W/S)$$

The propeller axis (or equivalent reference line) shall be assumed to be horizontal and the resultant water reaction to be acting in the plane of symmetry and passing through the center of gravity of the airplane, but inclined so that its horizontal component is equal to ¼ of its vertical component. Inertia forces shall be assumed to act in a direction parallel to the water reaction.

§ 03.25200 *Factors of safety.* For the design of float attachment members, including the members necessary to complete a rigid brace truss through the fuselage, the factor of safety shall be 1.85. For the remaining structural members, the factor of safety shall be 1.5.

§ 03.2521 *Landing with vertical reactions.* The limit load factor shall be 4.33 acting vertically, except that it need not exceed a value given by the following formula:

$$n=3.0+0.133\ (W/S)$$

The propeller axis (or equivalent reference line) shall be assumed to be horizontal, and the resultant water reaction to be vertical and passing through the center of gravity of the airplane.

§ 03.25210 *Factors of safety.* The factors of safety shall be the same as those specified in § 03.25200.

§ 03.2522 *Landing with side load.* The vertical component of the limit load factor shall be 4.0. The propeller axis (or equivalent reference line) shall be assumed to be horizontal and the resultant water reaction shall be assumed to be in the vertical plane which passes through the center of gravity of the airplane and is perpendicular to the propeller axis. The vertical load shall be applied through the keel or keels of the float or floats and evenly divided between the floats when twin floats are used. A side load equal to 1/4 of the vertical load shall be applied along a line approximately half-way between the bottom of the keel and the level of the water line at rest. When twin floats are used, the entire side load specified shall be applied to the float on the side from which the water reaction originates.

§ 03.2523 *Supplementary load conditions.* Each main float of a float seaplane shall be capable of carrying the following loads when supported at the attachment fittings as installed on the airplane:

(a) A limit load, acting upward, applied at the bow end of float and of magnitude equal to that portion of the airplane weight normally supported by the particular float.

(b) A limit load, acting upward, applied at the stern of magnitude equal to 0.8 times that portion of the airplane weight normally supported by the particular float.

(c) A limit load, acting upward, applied at the step and of magnitude equal to 1.5 times that portion of the airplane weight normally supported by the particular float.

§ 03.2524 *Bottom loads.* Main seaplane float bottoms shall be designed to withstand the following local pressures:

(a) A limit pressure of at least 10 p. s. i. over that portion of the bottom lying between the first step and a section 25 percent of the distance from the stop to the bow.

(b) A limit pressure of at least 5 p. s. i. over that portion of the bottom lying between the section 25 percent of the distance from the stop to the bow and a section 75 percent of the distance from the stop to the bow.

(c) A limit pressure of at least 3 p. s. i. over that portion of the bottom aft of the stop (aft of main step if more than one step is used).

The local pressures determined in paragraphs (a), (b), and (c) of this section shall be applied over local areas in such a manner as to cause the maximum loads in local structure such as bottom plating and stringers.

For the purpose of designing frames, keels, and chine structure, distributed bottom pressures equal to ½ the local values specified above shall be applied over the entire specified bottom areas.

§ 03.253 *Wing tip float loads.* Wing tip floats and their attachment, including the wing structure, shall be analyzed for each of the following conditions:

(a) A limit load acting vertically up at the completely submerged center of buoyancy and equal to 3 times the completely submerged displacement.

(b) A limit load inclined upward at 45° to the rear and acting through the completely submerged center of buoyancy and equal to 3 times the completely submerged displacement.

(c) A limit load acting parallel to the water surface (laterally) applied at the center of area of the side view and equal to 1.5 times the completely submerged displacement.

§ 03.2530 The primary wing structure shall incorporate sufficient extra strength to insure that failure of wing-tip float attachment members occurs before the wing structure is damaged.

§ 03.254 *Seawing loads.* Seawing design loads shall be based on suitable test data.

§ 03.3 *Design and construction.*

§ 03.30 *General.* The suitability of all questionable design details or parts having an important bearing on safety in operation shall be established by tests.

§ 03.300 *Approved specifications and parts.* Where the word "approved" or "acceptable" is used in this part to describe specifications, materials, parts, methods, and processes, such items shall be specifically approved by the Administrator upon a basis and in a manner found by him to be necessary to safety.

§ 03.301 *Materials and workmanship.* The suitability and durability of all materials used in the airplane structure shall be established on the basis of experience or tests. All materials used in the airplane structure shall conform to approved specifications which will insure their having the strength and other properties assumed in the design data. All workmanship shall be of a high standard.

§ 03.302 *Fabrication methods.* The methods of fabrication employed in constructing the airplane structure shall be such as to produce consistently sound structure. When a fabrication process such as gluing, spot-welding, or heat-treating requires close control to attain this objective, the process shall be performed in accordance with an approved process specification.

§ 03.3020 *Standard fastenings.* All bolts, pins, screws, and rivets used in the structure shall be of an approved type. The use of an approved locking device or method is required for all such bolts, pins, and screws. Self-locking nuts shall not be used on bolts subject to rotation during the operation of the airplane.

§ 03.303 *Protection.* All members of the structure shall be suitably protected against deterioration or loss of strength in service due to weathering, corrosion, abrasion, or other causes. In seaplanes, special precaution shall be taken against corrosion from salt water, particularly where parts made from different metals are in close proximity. Adequate provisions for ventilation and drainage of all parts of the structure shall be made.

§ 03.304 *Inspection provisions.* Adequate means shall be provided to permit the close examination of such parts of the airplane as require periodic inspection, adjustments for proper alignment and functioning, and lubrication of moving parts.

§ 03.31 *Structural parts.*

§ 03.310 *Material strength properties and design values.* Material strength properties shall be based on a sufficient number of tests of material conforming to specifications to establish design values on a statistical basis. The design values shall be so chosen that the probability of any structure being understrength because of material variations is extremely remote. Values contained in ANC–5 and ANC–18 shall be used unless shown to be inapplicable in a particular case.

NOTE: ANC–5, "Strength of Aircraft Elements" and ANC–18, "Design of Wood Aircraft Structures" are published by the Army-Navy-Civil Committee on Aircraft Design Criteria and may be obtained from the Government Printing Office, Washington, D. C.

§ 03.311 *Special factors.* Where there may be uncertainty concerning the ac-

tual strength of particular parts of the structure, or where the strength is likely to deteriorate in service prior to normal replacement, increased factors of safety shall be provided to insure that the reliability of such parts is not less than the rest of the structure as specified in the following sections.

§ 03.3110 *Variability factor.* For parts whose strength is subject to appreciable variability due to uncertainties in manufacturing processes and inspection methods, the factor of safety shall be increased sufficiently to make the probability of any part being understrength from this cause extremely remote. Minimum variability factors (only the highest pertinent variability factor need be considered) are as follows:

§ 03.31100 *Castings.* (a) Where visual inspection only is to be employed, the variability factor shall be 2.0.

(b) The variability factor may be reduced to 1.25 for ultimate loads and 1.15 for limit loads when at least three sample castings are tested to show compliance with these factors, and all sample and production castings are visually and radiographically inspected in accordance with an approved inspection specification.

(c) Other inspection procedures and variability factors may be used if found satisfactory by the Administrator.

§ 03.3111 *Bearing factors.* The factor of safety in bearing at bolted or pinned joints shall be suitably increased to provide for the following conditions:

(a) Relative motion in operation, (control surface and system joints are covered in §§ 03.34 and 03.35).

(b) Joints with clearance (free fit) subject to pounding or vibration.

Bearing factors need not be applied when covered by other special factors.

§ 03.3112 *Fitting factor.* Fittings are defined as parts such as end terminals used to join one structural member to another. A multiplying factor of safety of at least 1.15 shall be used in the analysis of all fittings the strength of which is not proven by limit and ultimate load tests in which the actual stress conditions are simulated in the fitting and the surrounding structure. This factor applies to all portions of the fitting, the means of attachment, and bearing on the members joined. In the case of integral fittings, the part shall be treated as a fitting up to the point where the section properties become typical of the member. The fitting factor need not be applied where a type of joint design based on comprehensive test data is used. (The following are examples: continuous joints in metal plating, welded joints, and scarf joints in wood, all made in accordance with approved practices.)

§ 03.312 *Fatigue strength.* The structure shall be designed, insofar as practicable, to avoid points of stress concentration where variable stresses above the fatigue limit are likely to occur in normal service.

§ 03.32 *Flutter and vibration prevention measures.* Wings, tail, and control surfaces shall be free from flutter, airfoil divergence, and control reversal from lack of rigidity, for all conditions of operation within the limit V–n envelope, and the following detail requirements shall apply:

(a) Adequate wing torsional rigidity shall be demonstrated by tests or other methods found suitable by the Administrator.

(b) The mass balance of surfaces shall be such as to preclude flutter.

(c) The natural frequencies of all main structural components shall be determined by vibration tests or other methods found satisfactory by the Administrator.

§ 03.33 *Wings.*

§ 03.330 *Proof of strength.* The strength of stressed-skin wings shall be substantiated by load tests or by combined structural analysis and tests.

§ 03.3300 *Ribs.* The strength of ribs in other than stressed-skin wings shall be proved by test to at least 125 percent of the ultimate loads for the most severe loading conditions, unless a rational load analysis and test procedure is employed and the tests cover the variability of the particular type of construction.

The effects of ailerons and high lift devices shall be properly accounted for. Rib tests shall simulate conditions in the airplane with respect to torsional rigidity of spars, fixity conditions, lateral support, and attachment to spars.

§ 03.331 *External bracing.* When wires are used for external lift bracing they shall be double unless the design provides for a lift-wire-cut condition. Rigging loads shall be taken into account in a rational or conservative manner. The end connections of brace wires shall be such as to minimize restraint against bending or vibration. When brace struts of large fineness ratio are used, the aerodynamic forces on such struts shall be taken into account.

§ 03.332 *Covering.* Strength tests of fabric covering shall be required unless approved grades of cloth, methods of support, attachment, and finishing are employed. Special tests shall be required when it appears necessary to account for the effects of unusually high design air speeds, slipstream velocities, or other unusual conditions.

§ 03.34 *Control surfaces (fixed and movable).*

§ 03.341 *Proof of strength.* Limit load tests of control surfaces are required. Such tests shall include the horn or fitting to which the control system is attached. In structural analyses, rigging loads due to wire bracing shall be taken into account in a rational or conservative manner.

§ 03.342 *Installation.* Movable tail surfaces shall be so installed that there is no interference between the surfaces or their bracing when each is held in its extreme position and all others are operated through their full angular movement. When an adjustable stabilizer is used, stops shall be provided which, in the event of failure of the adjusting mechanism, will limit its travel to a range permitting safe flight and landing.

§ 03.343 *Hinges.* Control surface hinges, excepting ball and roller bearings, shall incorporate a multiplying factor of safety of not less than 6.67 with respect to the ultimate bearing strength of the softest material used as a bearing. For hinges incorporating ball or roller bearings, the approved rating of the bearing shall not be exceeded. Hinges shall provide sufficient strength and rigidity for loads parallel to the hinge line.

§ 03.35 *Control systems.*

§ 03.350 *General.* All controls shall operate with sufficient ease, smoothness, and positiveness to permit the proper performance of their function and shall be so arranged and identified as to provide convenience in operation and prevent the possibility of confusion and subsequent inadvertent operation. (See § 03.3802 for cockpit controls.)

§ 03.351 *Primary flight controls.* Primary flight controls are defined as those used by the pilot for the immediate control of the pitching, rolling, and yawing of the airplane.

For two-control airplanes the design shall be such as to minimize the likelihood of complete loss of the lateral-directional control in the event of failure of any connecting or transmitting element in the control system.

§ 03.352 *Trimming controls.* Proper precautions shall be taken against the possibility of inadvertent, improper, or abrupt tab operations. Means shall be provided to indicate to the pilot the direction of control movement relative to airplane motion and the position of the trim device with respect to the range of adjustment. The means used to indicate the direction of the control movement shall be adjacent to the control, and the means used to indicate the position of the trim device shall be easily visible to the pilot and so located and operated as to preclude the possibility of confusion. Trimming devices shall be capable of continued normal operation notwithstanding the failure of any one connecting or transmitting element in the primary flight control system. Tab controls shall be irreversible unless the tab is properly balanced and possesses no unsafe flutter characteristics. Irreversible tab systems shall provide adequate rigidity and reliability in the portion of the system from the tab to the attachment of the irreversible unit to the airplane structure.

§ 03.353 *Wing flap controls.* The controls shall be such that when the flap has been placed in any position upon which compliance with the performance requirements is based, the flap will not move from that position except upon further adjustment of the control or the automatic operation of a flap load limiting device. Means shall be provided to indicate the flap position to the pilot. If any flap position other than fully retracted or extended is used to show compliance with the performance requirements, such means shall indicate each such position. The rate of movement of the flaps in response to the operation of the pilot's control, or of an

automatic device shall not be such as to result in unsatisfactory flight or performance characteristics under steady or changing conditions of air speed, engine power, and airplane attitude. (See §§ 03.13101 and 03.13102.)

§ 03.3530 *Flap interconnection.* The motion of flaps on opposite sides of the plane of symmetry shall be synchronized by a mechanical interconnection, or the airplane is demonstrated to have safe flight characteristics while the flaps are retracted on one side and extended on the other.

Where an interconnection is used, in the case of multiengined airplanes, it shall be designed to account for the unsymmetrical loads resulting from flight with the engines on one side of the plane of symmetry inoperative and the remaining engines at take-off power. For single-engine airplanes, it may be assumed that 100 percent of the critical air load acts on one side and 70 percent on the other.

§ 03.354 *Stops.* All control systems shall be provided with stops which positively limit the range of motion of the control surfaces. Stops shall be so located in the system that wear, slackness, or take-up adjustments will not appreciably affect the range of surface travel. Stops shall be capable of withstanding the loads corresponding to the design conditions for the control system.

§ 03.355 *Control system locks.* When a device is provided for locking a control surface while the airplane is on the ground or water:

(a) The locking device shall be so installed as to provide unmistakable warning to the pilot when it is engaged, and

(b) Means shall be provided to preclude the possibility of the lock becoming engaged during flight.

§ 03.356 *Proof of strength.* Tests shall be conducted to prove compliance with limit load requirements. The direction of test loads shall be such as to produce the most severe loading of the control system structure. The tests shall include all fittings, pulleys, and brackets used to attach the control system to the primary structure. Analyses or individual load tests shall be conducted to demonstrate compliance with the multiplying factor of safety requirements specified for control system joints subjected to angular motion.

§ 03.3560 *Operation test.* An operation test shall be conducted by operating the controls from the pilot compartment with the entire system so loaded as to correspond to the limit air loads on the surface. In this test there shall be no jamming, excessive friction, or excessive deflection.

§ 03.357 *Control system details.*

§ 03.3570 *General.* All control systems and operating devices shall be so designed and installed as to prevent jamming, chafing, or interference as a result of inadequate clearances or from cargo, passengers, or loose objects. Special precautions shall be provided in the cockpit to prevent the entry of foreign objects into places where they might jam the controls. Provisions shall be made to prevent the slapping of cables or tubes against parts of the airplane.

§ 03.3571 *Cable systems.* Cables, cable fittings, turnbuckles, splices, and pulleys shall be in accordance with approved specifications. Cables smaller than ⅛-inch diameter shall not be used in primary control systems. The design of cable systems shall be such that there will not be hazardous change in cable tension throughout the range of travel under operating conditions and temperature variations. Pulley types and sizes shall correspond to the cables with which they are used, as specified on the pulley specification. All pulleys shall be provided with satisfactory guards which shall be closely fitted to prevent the cables becoming misplaced, or fouling even when slack. The pulleys shall lie in the plane passing through the cable within such limits that the cable does not rub against the pulley flange. Fairleads shall be so installed that they are not required to cause a change in cable direction of more than 3°. Clevis pins (excluding those not subject to load or motion) retained only by cotter pins shall not be employed in the control system. Turnbuckles shall be attached to parts having angular motion in such a manner as to prevent positively binding throughout the range of travel. Provisions for visual inspection shall be made at all fairleads, pulleys, terminals, and turnbuckles.

§ 03.3572 *Joints.* Control system joints subject to angular motion in push-pull systems, excepting ball and roller bearing systems, shall incorporate a multiplying factor of safety of not less than 3.33 with respect to the ultimate bearing strength of the softest material used as a bearing. This factor may be reduced to 2.0 for such joints in cable control systems. For ball or roller bearings the approved rating of the bearing shall not be exceeded.

§ 03.3573 *Spring devices.* The reliability of any spring devices used in the control system shall be established by tests simulating service conditions, unless it is demonstrated that failure of the spring will not cause flutter or unsafe flight characteristics.

§ 03.36 *Landing gear.*

§ 03.361 *Shock absorbers.* Shock absorbing elements in main, nose, and tail wheel units shall be substantiated by the tests specified in the following section. In addition, the shock absorbing ability of the landing gear in taxiing must be demonstrated in the operational tests of § 03.143.

§ 03.3610 *Shock absorption tests.* (a) It shall be demonstrated by energy aborption tests that the limit load factors selected for design in accordance with § 03.241 will not be exceeded in landings with the limit descent velocity specified in that section.

(b) In addition, a reserve of energy absorption shall be demonstrated by a test in which the descent velocity is at least 1.2 times the limit descent velocity. In this test there shall be no failure of the shock absorbing unit, although yielding of the unit will be permitted. Wing lift equal to the weight of the airplane may be assumed for purposes of this test.

§ 03.3611 *Limit drop tests.* If compliance with the specified limit landing conditions of § 03.3610 (a) is demonstrated by free drop tests, these shall be conducted on the complete airplane, or on units consisting of wheel, tire, and shock absorber in their proper relation, from free drop heights not less than the following:

$$h \text{ (inches)} = 3.6 \ (W/S)^{0.5}$$

except that the free drop height shall not be less than 9.2 inches and need not be greater than 18.7 inches.

In simulating the permissible wing lift in free drop tests, the landing gear unit shall be dropped with an effective mass equal to:

$$W_e = W\left[\frac{h+(1-L)\ d}{h+d}\right]$$

where

W_e = the effective weight to be used in the drop test

h = specified height of drop in inches

d = deflection under impact of the tire (at the approved inflation pressure) plus the vertical component of the axle travel relative to the drop mass. The value of d used in the computation of W_e shall not exceed the value actually obtained in the drop tests.

$W = W_m$ for main gear units, and shall be equal to the static weight on the particular unit with the airplane in the level attitude (with the nose wheel clear, in the case of nose wheel type airplanes).

$W = W_t$ for tail gear units, and shall be equal to the static weight on the tail unit with the airplane in the tail down attitude.

$W = W_n$ for nose wheel units, and shall be equal to the static reaction which will exist at the nose wheel, when the mass of the airplane is concentrated at the center of gravity and exerts a force of 1.0g downward and 0.33g forward.

L = ratio of assumed wing lift to airplane weight, not greater than 0.667.

The attitude in which the landing gear unit is drop tested shall be such as to simulate the airplane landing condition which is critical from the standpoint of energy to be absorbed by the particular unit.

§ 03.3612 *Limit load factor determination.* In determining the limit airplane inertia load factor n from the free drop test described above, the following formula shall be used:

$$n = n_j \frac{W_e}{W} + L$$

where n_j = the load factor developed in the drop test, i.e., the acceleration (dv/dt) in g's recorded in the drop test, plus 1.0.

The value of n so determined shall not be greater than the limit inertia load factor used in the landing conditions, § 03.241.

§ 03.3613 *Reserve energy absorption drop tests.* If compliance with the reserve energy absorption condition specified in § 03.3610 (b) is demonstrated by free drop tests, the drop height shall be not less than 1.44 times the drop height specified in § 03.3611. In simulating wing lift equal to the airplane weight, the units shall be dropped with an effective mass equal to

$$W_e = W\frac{h}{h+d}$$

where the symbols and other details are the same as in § 03.3611.

§ 03.362 *Retracting mechanism.* The landing gear retracting mechanism and supporting structure shall be designed for the maximum load factors in the flight conditions when the gear is in the retracted position. It shall also be designed for the combination of friction, inertia, brake torque, and air loads occurring during retraction at any air speed up to $1.6V_{s1}$, flaps retracted and any load factors up to those specified for the flaps extended condition, § 03.212. The landing gear and retracting mechanism, including the wheel well doors, shall withstand flight loads with the landing gear extended at any speed up to at least $1.6V_{s1}$, flaps retracted. Positive means shall be provided for the purpose of maintaining the wheels in the extended position.

§ 03.3620 *Emergency operation.* When other than manual power for the operation of the landing gear is employed, an auxiliary means of extending the landing gear shall be provided.

§ 03.3621 *Operation test.* Proper functioning of the landing gear retracting mechanism shall be demonstrated by operation tests.

§ 03.3622 *Position indicator and warning device.* When retractable landing wheels are used, means shall be provided for indicating to the pilot when the wheels are secured in the extreme positions. In addition, landplanes shall be provided with an aural or equally effective warning device, which shall function continuously after the throttle is closed until the gear is down and locked.

§ 03.3623 *Control.* (See § 03.3802.)

§ 03.363 *Wheels.* Main landing gear wheels (i. e., those nearest the airplane center of gravity) shall be of an approved type.

The rated static load of each main wheel shall not be less than the design weight for ground loads (§ 03.240) divided by the number of main wheels. Nose wheels shall have been tested for an ultimate radial load not less than the maximum nose wheel ultimate load obtained in the ground loads requirements, and for corresponding side and burst loads.

§ 03.364 *Tires.* A landing gear wheel may be equipped with any make or type of tire, provided that the tire is a proper fit on the rim of the wheel and provided that the approved tire rating is not exceeded under the following conditions:

(a) Load on main wheel tires equal to the airplane weight divided by the number of wheels,

(b) Load on nose wheel tires (to be compared with the dynamic rating established for such tires) equal to the reaction obtained at the nose wheel, assuming the mass of the airplane concentrated at the center of gravity and exerting a force of 1.0g downward and 0.31g forward, the reactions being distributed to the nose and main wheels by the principle of statics with the drag reaction at the ground applied only at those wheels having brakes. When specially constructed tires are used to support an airplane, the wheels shall be plainly and conspicuously marked to that effect. Such markings shall include the make, size, number of plies, and identification marking of the proper tire.

NOTE: Approved ratings are those assigned by the Tire and Rim Association or by the Administrator.

§ 03.365 *Brakes.* Brakes shall be installed which are adequate to prevent the airplane from rolling on a paved runway while applying take-off power to the critical engine, and of sufficient capacity to provide adequate speed control during taxiing without the use of excessive pedal or hand forces.

§ 03.366 *Skis.* Skis shall be of an approved type. The approved rating of the skis shall not be less than the maximum weight of the airplane on which they are installed.

§ 03.3660 *Installation.* When type certificated skis are installed, the installation shall be made in accordance with the ski or airplane manufacturer's recommendations which shall have been approved by the Administrator. When other than type certificated skis are installed, data shall be submitted to the Administrator showing a dimensional drawing of the proposed method of attaching the skis, the sizes and material of the restraining members and attachment fittings.

In addition to such shock cord(s) as may be provided, front and rear check cables shall be used on skis not equipped with special stabilizing devices.

§ 03.3661 *Tests.* (a) If the airplane is of a model not previously approved with the specific ski installation, it shall satisfactorily pass a ground inspection of the installation, demonstrate satisfactory landing and taxiing characteristics, and comply with such flight tests as are found necessary to indicate that the airplane's flight characteristics are satisfactory with the skis installed.

(b) If the airplane is of a model previously approved with the specific ski installation, it need pass satisfactorily only a ground inspection of the installation.

§ 03.37 *Hulls and floats.*

§ 03.370 *Buoyancy (main seaplane floats).* Main seaplane floats shall have a buoyancy in excess of that required to support the maximum weight of the airplane in fresh water as follows:

(a) 80 percent in the case of single floats.

(b) 90 percent in the case of double floats.

Main seaplane floats for use on airplanes of 2,500 lbs. or more maximum weight shall contain at least 5 water-tight compartments of approximately equal volume. Main seaplane floats for use on air planes of less than 2,500 lbs. maximum weight shall contain at least 4 such compartments.

§ 03.371 *Buoyancy (boat seaplanes).* The hulls of boat seaplanes and amphibians shall be divided into water-tight compartments in accordance with the following requirements:

(a) In airplanes of 5,000 lbs. or more maximum weight, the compartments shall be so arranged that, with any two adjacent compartments flooded, the hull and auxiliary floats (and tires, if used) will retain sufficient buoyancy to support the maximum weight of the airplane in fresh water.

(b) In airplanes of 1,500 to 5,000 lbs. maximum weight, the compartments shall be so arranged that, with any one compartment flooded, the hull and auxiliary floats (and tires, if used) will retain sufficient buoyancy to support the maximum weight of the airplane in fresh water.

(c) In airplanes of less than 1,500 lbs. maximum weight, water-tight subdivision of the hull is not required.

(d) Bulkheads may have water-tight doors for the purpose of communication between compartments.

§ 03.372 *Water stability.* Auxiliary floats shall be so arranged that when completely submerged in fresh water, they will provide a righting moment which is at least 1.5 times the upsetting moment caused by the airplane being tilted. A greater degree of stability may be required by the Administrator in the case of large flying boats, depending on the height of the center of gravity above the water level, the area and location of wings and tail surfaces, and other considerations.

§ 03.38 *Fuselage.*

§ 03.380 *Pilot compartment.*

§ 03.3800 *General.* The arrangement of the pilot compartment and its appurtenances shall provide a satisfactory degree of safety and assurance that the pilot will be able to perform all his duties and operate the controls in the correct manner without unreasonable concentration and fatigue.

The primary flight control units listed on figure 03–14, excluding cables and control rods, shall be so located with respect to the propellers that no portion of the pilot or controls lies in the region between the plane of rotation of any inboard propeller and the surface generated by a line passing through the center of the propeller hub and making an angle of 5° forward or aft of the plane of rotation of the propeller.

§ 03.3801 *Vision.* The pilot compartment shall be arranged to afford the pilot a sufficiently extensive, clear, and undistorted view for the safe operation of the airplane. During flight in a moderate rain condition, the pilot shall have an adequate view of the flight path in normal flight and landing, and have sufficient protection from the elements so that his vision is not unduly impaired. This may be accomplished by providing an openable window or by a means for maintaining a portion of the windshield in a clear condition without continuous attention by the pilot. The pilot compartment shall be free of glare and reflections which would interfere with the pilot's vision. For airplanes intended for night operation, the demonstration of these qualities shall include night flight tests.

§ 03.38010 *Pilot windshield and windows.* All glass panes shall be of a nonsplintering safety type.

§ 03.3802 *Cockpit controls.* All cockpit controls shall be so located and, except for those the function of which is obvious, identified as to provide convenience in operation including provisions to prevent the possibility of confusion and consequent inadvertent operation. (See figure 03–14 for required sense of motion of cockpit controls.) The controls shall be so located and arranged that when seated it will be readily possible for the pilot to obtain full and unrestricted movement of each control without interference from either his clothing or the cockpit structure.

Identical power-plant controls for the several engines in the case of multiengine airplanes shall be so located as to prevent any misleading impression as to the engines to which they relate.

COCKPIT CONTROLS

Figure 03–14

Controls	*Movement and actuation*
Primary:	
Aileron	Right (clockwise) for right wing down.
Elevator	Rearward to pitch nose up.
Rudder	Right pedal forward for nose right.
Power plant:	
Throttle	Forward to open.

§ 03.38021 *Instruments and markings.* See § 03.5200 relative to instrument arrangement. The operational markings, instructions, and placards required for the instruments and controls are specified in §§ 03.620 and 03.621.

§ 03.381 *Emergency provisions.*

§ 03.3811 *Protection.* The fuselage shall be designed to give reasonable assurance that each occupant, if he makes proper use of belts or harness for which provisions are made in the design, will not suffer serious injury during minor crash conditions, as a result of contact of any vulnerable part of his body with any penetrating or relatively solid object, although it is accepted that parts of the airplane may be damaged.

(a) The ultimate accelerations to which occupants are assumed to be subjected shall be as follows:

	N. U.	A
Upward	3.0*g*	4.5*g*
Forward	9.0*g*	9.0*g*
Sideward	1.5*g*	1.5*g*

(b) For airplanes having retractable landing gear, the fuselage in combination with other portions of the structure shall be designed to afford protection of the occupants in a wheels-up landing with moderate descent velocity.

(c) If the characteristics of an airplane are such as to make a turnover reasonably probable, the fuselage of such an airplane in combination with other portions of the structure shall be designed to afford protection of the occupants in a complete turnover.

NOTE: In paragraphs (b) and (c) of § 03.3811, a vertical ultimate acceleration of 3g and a friction coefficient of 0.5 at the ground may be assumed.

§ 03.3812 *Exits.* Closed cabins on airplanes carrying more than 5 persons shall be provided with emergency exits consisting of movable windows or panels or of additional external doors which provide a clear and unobstructed opening, the minimum dimensions of which shall be such that a 19 in. by 26 in. ellipse may be completely inscribed therein. The exits shall be readily accessible, shall not require exceptional agility of a person using them, and shall be distributed so as to facilitate egress without crowding in all probable attitudes resulting from a crash. The method of opening shall be simple and obvious, and the exits shall be so arranged and marked as to be readily located and operated even in darkness. Reasonable provisions shall be made against the jamming of exits as a result of fuselage deformation. The proper functioning of exits shall be demonstrated by tests.

The number of emergency exits required is as follows:

(a) Airplanes with a total seating capacity of more than 5 persons, but not in excess of 15, shall be provided with at least one emergency exit or one suitable door in addition to the main door specified in § 03.3821. This emergency exit, or second door, shall be on the opposite side of the cabin from the main door.

(b) Airplanes with a seating capacity of more than 15 persons shall be provided with emergency exits or doors in addition to those required in paragraph (a) of this section. There shall be one such additional exit or door located either in the top or side of the cabin for every additional 7 persons or fraction thereof above 15, except that not more than 4 exits, including doors, will be required if the arrangement and dimensions are suitable for quick evacuation of all occupants.

If the pilot compartment is separated from the cabin by a door, which is likely to block the escape in the event of a minor crash, it shall have its own exit, but such exit shall not be considered as an emergency exit for the passengers.

§ 03.3812–UA Exits shall be provided which will permit all occupants to bail out quickly with parachutes.

§ 03.3813 *Fire precautions.*

§ 03.38131 *Cabin interiors.* Only materials which are flash-resistant shall be used. In compartments where smoking is to be permitted, the materials of the cabin lining, floors, upholstery, and furnishings shall be flame-resistant. Such compartments shall be equipped with an adequate number of self-contained ash trays. All other compartments shall be placarded against smoking.

§ 03.38132 *Combustion heaters.* Gasoline operated combustion heater installations shall comply with applicable parts of the power-plant installation requirements covering fire hazards and precautions. All applicable requirements concerning fuel tanks, lines, and exhaust systems shall be considered.

§ 03.382 *Personnel and cargo accommodations.*

§ 03.3821 *Doors.* Closed cabins on all airplanes carrying passengers shall be provided with at least one adequate and easily accessible external door. No passenger door shall be so located with respect to the propeller discs as to endanger persons using the door.

§ 03.3822 *Seats and berths.* All seats and berths and supporting structure shall be designed for a passenger weight of 170 lbs. (190 lbs. with parachute for the acrobatic and utility category) and the maximum load factors corresponding to all specified flight and ground load conditions including the emergency conditions of § 03.3811.

Pilot seats shall be designed for the reactions resulting from the application of the pilot forces to the primary flight controls as specified in § 03.230.

§ 03.3822–UA All seats designed to be occupied in the U and A categories under § 03.113 (c) (4) shall be designed to accommodate passengers wearing parachutes.

§ 03.38221 *Safety belt or harness provisions.* Provisions shall be made at all seats and berths for the installation of belts or harness of sufficient strength to comply with the emergency conditions of § 03.3811.

§ 03.3823 *Cargo compartments.* Each cargo compartment shall be designed for the placarded maximum weight of contents and critical load distributions at the appropriate maximum load factors corresponding to all specified flight and ground load conditions. Suitable provisions shall be made to prevent the contents of cargo compartments from becoming a hazard by shifting. Such provisions shall be adequate to protect the passengers from injury by the contents of any cargo compartment when the ultimate forward acting accelerating force is 4.5g.

§ 03.3824 *Ventilation.* All passenger and crew compartments shall be suitably ventilated. Carbon monoxide concentration shall not exceed one part in 20,000 parts of air.

§ 03.39 *Miscellaneous.*

§ 03.390 Leveling marks shall be provided for leveling the airplane on the ground.

§ 03.4 *Power-plant installation—Reciprocating engines.*

§ 03.40 *General.* (a) The power-plant installation shall be considered to include all components of the airplane which are necessary for its propulsion. It shall also be considered to include all components which affect the control of the major propulsive units or which affect their continued safety of operation.

(b) All components of the power-plant installation shall be constructed, arranged, and installed in a manner which will assure the continued safe operation of the airplane and power plant. Accessibility shall be provided to permit such inspection and maintenance as is necessary to assure continued airworthiness.

§ 03.41 *Engines and propellers.*

§ 03.410 *Engines.* Engines installed in certificated airplanes shall be of a type which has been certificated in accordance with the provisions of Part 13, entitled "Aircraft Engine Airworthiness."

§ 03.411 *Propellers.* (a) Propellers installed in certificated airplanes shall be

of a type which has been certificated in accordance with the provisions of Part 14, entitled "Aircraft Propeller Airworthiness."

(b) The maximum engine power and propeller shaft rotational speed permissible for use in the particular airplane involved shall not exceed the corresponding limits for which the propeller has been certificated.

§ 03.4110 *Propeller vibration.* In the case of airplanes equipped with metal propellers, the magnitude of the propeller blade vibration stresses under all normal conditions of operation shall be determined by actual measurements or by comparison with similar installations for which such measurements have been made. The vibration stresses thus determined shall not exceed values which have been demonstrated to be safe for continuous operation. Vibration tests may be waived and the propeller installation accepted on the basis of service experience, engine or ground tests which show adequate margins of safety, or other considerations which satisfactorily substantiate its safety in this respect. In addition to metal propellers, the Administrator may require that similar substantiation of the vibration characteristics be accomplished for other types of propellers, with the exception of conventional fixed pitch wood propellers.

§ 03.4111 *Propeller pitch and speed limitations.* The propeller pitch and speed shall be limited to values which will assure safe operation under all normal conditions of operation and will assure compliance with the performance requirements specified in § 03.12 and its related subsections.

§ 03.41110 *Speed limitations for fixed pitch propellers, ground adjustable pitch propellers, and automatically varying pitch propellers which cannot be controlled in flight.*

(a) During take-off and initial climb at best rate-of-climb speed, the propeller, in the case of fixed pitch or ground adjustable types, shall restrain the engine to a speed not exceeding its maximum permissible take-off speed and, in the case of automatic variable pitch types, shall limit the maximum governed engine rpm to a speed not exceeding the maximum permissible take-off speed. In demonstrating compliance with this provision the engine shall be operated at full throttle or the throttle setting corresponding to the maximum permissible take-off manifold pressure.

(b) During a closed throttle glide at the placard, "never exceed speed," (see § 03.6101), the propeller shall not cause the engine to rotate at a speed in excess of 110 percent of its maximum allowable continuous speed.

§ 03.41111 *Speed and pitch limitations for controllable pitch propellers without constant speed controls.* The stops or other means incorporated in the propeller mechanism to restrict the pitch range shall limit (a) the lowest possible blade pitch to a value which will assure compliance with the provisions of § 03.41110 (a), and (b) the highest possible blade pitch to a value not lower than the flattest blade pitch with which compliance with the provisions of § 03.41110 (b) can be demonstrated.

§ 03.41112 *Variable pitch propellers with constant speed controls.* (a) Suitable means shall be provided at the governor to limit the speed of the propeller. Such means shall limit the maximum governed engine speed to a value not exceeding its maximum permissible take-off rpm.

(b) The low pitch blade stop, or other means incorporated in the propeller mechanism to restrict the pitch range, shall limit the speed of the engine to a value not exceeding 103 percent of the maximum permissible take-off rpm under the following conditions:

(1) Propeller blades set in the lowest possible pitch and the governor inoperative.

(2) Engine operating at take-off manifold pressure with the airplane stationary and with no wind.

§ 03.4112 *Propeller clearance.* With the airplane loaded to the maximum weight and most adverse center of gravity position and the propeller in the most adverse pitch position, propeller clearances shall not be less than the following, unless smaller clearances are properly substantiated for the particular design involved:

(a) *Ground clearance.* (1) Seven in. (for airplanes equipped with nose wheel type landing gears) or 9 in. (for airplanes equipped with tail wheel type landing gears) with the landing gear statically deflected and the airplane in the level, normal take-off, or taxiing attitude, whichever is most critical.

(2) In addition to subparagraph (1) of this paragraph, there shall be positive clearance between the propeller and the ground when, with the airplane in the level take-off attitude, the critical tire is completely deflated and the corresponding landing gear strut is completely bottomed.

(b) *Water clearance.* A minimum clearance of 18 in. shall be provided unless compliance with § 03.144 can be demonstrated with lesser clearance.

(c) *Structural clearance.* (1) One in. radial clearance between the blade tips and the airplane structure, or whatever additional radial clearance is necessary to preclude harmful vibration of the propeller or airplane.

(2) One-half in. longitudinal clearance between the propeller blades or cuffs and stationary portions of the airplane. Adequate positive clearance shall be provided between other rotating portions of the propeller or spinner and stationary portions of the airplane.

§ 03.42 *Fuel system.* The fuel system shall be constructed and arranged in a manner to assure the provision of fuel to each engine at a flow rate and pressure adequate for proper engine functioning under all normal conditions of operation, including all maneuvers and acrobatics for which the airplane is intended.

§ 03.421 *Fuel system arrangement.* Fuel systems shall be so arranged as to permit any one fuel pump to draw fuel from only one tank at a time. Gravity feed systems shall not supply fuel to any one engine from more than one tank at a time unless the tank air spaces are interconnected in such a manner as to assure that all interconnected tanks will feed equally. (See also § 03.4223.)

§ 03.4210 *Multiengine fuel system arrangement.* The fuel systems of multiengine airplanes shall be arranged to permit operation in such a manner that the failure of any one component will not result in the loss of the power of more than one engine. Unless other provisions are made in order to comply with this requirement, the fuel system shall be arranged to permit supplying fuel to each engine through a system entirely independent of any portions of the system supplying fuel to the other engines.

§ 03.4211 *Pressure cross feed arrangements.* Pressure cross feed lines shall not pass through portions of the airplane devoted to carrying personnel or cargo, unless means are provided to permit the flight personnel to shut off the supply of fuel to these lines, or unless any joints, fittings, or other possible sources of leakage installed in such lines are enclosed in a fuel and fumeproof enclosure which is ventilated and drained to the exterior of the airplane. Bare tubing need not be enclosed but shall be protected where necessary against possible inadvertent damage.

§ 03.422 *Fuel system operation.*

§ 03.4220 *Fuel flow rate.* The ability of the fuel system to provide the required fuel flow rate and pressure shall be demonstrated when the airplane is in the attitude which represents the most adverse condition from the standpoint of fuel feed and quantity of unusable fuel in the tank. During this test fuel shall be delivered to the engine at the applicable flow rate (see §§ 03.42200, 03.42201, and 03.42202) and at a pressure not less than the minimum required for proper carburetor operation. A suitable mock-up of the system, in which the most adverse conditions are simulated, may be used for this purpose. The quantity of fuel in the tank being tested shall not exceed the amount established as the unusable fuel supply for that tank as determined by demonstration of compliance with the provisions of § 03.4221 (see also §§ 03.423 and 03.5222), plus whatever minimum quantity of fuel it may be necessary to add for the purpose of conducting the flow test. If a fuel flowmeter is provided, the meter shall be blocked during the flow test and the fuel shall flow through the meter by-pass.

§ 03.42200 *Fuel flow rate for gravity feed systems.* The fuel flow rate for gravity feed systems (main and reserve supply) shall be 1.2 lbs. per hour for each take-off horsepower or 150 percent of the actual take-off fuel consumption of the engine, whichever is greater.

§ 03.42201 *Fuel flow rate for pump systems.* The fuel flow rate for pump systems (main and reserve supply) shall be 0.9 lb. per hour for each take-off horsepower or 125 percent of the actual take-off fuel consumption of the engine, whichever is greater. This flow rate

shall be applicable to both the primary engine-driven pump and the emergency pumps and shall be available when the pump is running at the speed at which it would normally be operating during take-off. In the case of hand-operated pumps, this speed shall be considered to be not more than 60 complete cycles (120 single strokes) per minute.

§ 03.42202 *Fuel flow rate for auxiliary fuel systems and fuel transfer systems.* The provisions of § 03.42200 or § 03.42201, whichever is applicable, shall also apply to auxiliary and transfer systems with the exception that the required fuel flow rate shall be established upon the basis of maximum continuous power and speed instead of take-off power and speed. A lesser flow rate shall be acceptable, however, in the case of a small auxiliary tank feeding into a large main tank, provided a suitable placard is installed to require that the auxiliary tank must only be opened to the main tank when a predetermined satisfactory amount of fuel still remains in the main tank.

§ 03.4221 *Determination of unusable fuel supply and fuel system operation on low fuel.* (a) The unusable fuel supply for each tank shall be established as not less than the quantity at which the first evidence of malfunctioning occurs under the conditions specified below. (See also § 03.423.) In the case of airplanes equipped with more than one fuel tank, any tank which is not required to feed the engine in all of the conditions specified below need only be investigated for those flight conditions in which it shall be used and the unusable fuel supply for the particular tank in question shall then be based on the most critical of those conditions which are found to be applicable. In all such cases, information regarding the conditions under which the full amount of usable fuel in the tank can safely be used shall be made available to the operating personnel by means of a suitable placard or instructions in the Airplane Flight Manual.

Upon presentation of the airplane for test, the applicant shall stipulate the quantity of fuel with which he chooses to demonstrate compliance with this provision and shall also indicate which of the following conditions is most critical from the standpoint of establishing the unusable fuel supply. He shall also indicate the order in which the other conditions are critical from this standpoint:

(1) Level flight at maximum continuous power or the power required for level flight at V_c, whichever is less.

(2) Climb at maximum continuous power at the calculated best angle of climb at minimum weight,

(3) Rapid application of power and subsequent transition to best rate of climb following a power-off glide at 1.3 V_{s0},

(4) Sideslips and skids in level flight, climb, and glide under the conditions specified in subparagraphs (1), (2), and (3) of this paragraph, of the greatest severity likely to be encountered in normal service or in turbulent air.

(b) In the case of utility category airplanes, there shall be no evidence of malfunctioning during the execution of all approved maneuvers included in the Airplane Flight Manual. During this test the quantity of fuel in each tank shall not exceed the quantity established as the unusable fuel supply, in accordance with paragraph (a) of this section, plus 0.03 gallon for each maximum continuous horsepower for which the airplane is certificated.

(c) In the case of acrobatic category airplanes, there shall be no evidence of malfunctioning during the execution of all approved maneuvers included in the Airplane Flight Manual. During this test the quantity of fuel in each tank shall not exceed that specified in paragraph (b) of this section.

(d) If an engine can be supplied with fuel from more than one tank, it shall be possible to regain the full power and fuel pressure of that engine in not more than 10 seconds (for single-engine airplanes) or 20 seconds (for multiengine airplanes) after switching to any full tank after engine malfunctioning becomes apparent due to the depletion of the fuel supply in any tank from which the engine can be fed. Compliance with this provision shall be demonstrated in level flight.

(e) There shall be no evidence of malfunctioning during take-off and climb for one minute at the calculated attitude of best angle of climb at take-off and minimum weight. At the beginning of this test the quantity of fuel in each tank shall not exceed that specified in paragraph (b) of this section.

§ 03.4222 *Fuel system hot weather operation.* The fuel system shall be so arranged as to minimize the possibility of the formation of vapor lock in the system under all normal conditions of operation.

§ 03.4223 *Flow between interconnected tanks.* In the case of gravity feed systems with tanks whose outlets are interconnected, it shall not be possible for fuel to flow between tanks in quantities sufficient to cause an overflow of fuel from the tank vent when the airplane is operated as specified in § 03.4221 (a) and the tanks are full.

§ 03.423 *Fuel tanks.* Fuel tanks shall be capable of withstanding without failure any vibration, inertia, and fluid and structural loads to which they may be subjected in operation. Flexible fuel tank liners shall be of an acceptable type. Integral type fuel tanks shall be provided with adequate facilities for the inspection and repair of the tank interior. The total usable capacity of the fuel tanks shall not be less than one gallon for each 7 maximum continuous rated horsepower for which the airplane is certificated. The unusable capacity shall be considered to be the minimum quantity of fuel which will permit compliance with the provisions of § 03.4221. The fuel quantity indicator shall be adjusted to account for the unusable fuel supply as specified in § 03.5222. If the unusable fuel supply in any tank exceeds 5 percent of the tank capacity or one gallon, whichever is greater, a placard and a suitable notation in the Airplane Flight Manual shall be provided to indicate to the flight personnel that the fuel remaining in the tank when the quantity indicator reads zero cannot be used safely in flight. The weight of the unusable fuel supply shall be included in the empty weight of the airplane.

§ 03.4230 *Fuel tank tests* (a) Fuel tanks shall be capable of withstanding the following pressure tests without failure or leakage. These pressures may be applied in a manner simulating the actual pressure distribution in service:

(1) Conventional metal tanks and nonmetallic tanks whose walls are not supported by the airplane structure: a pressure of 3.5 p. s. i. or the pressure developed during the maximum ultimate acceleration of the airplane with a full tank, whichever is greater.

(2) Integral tanks: the pressure developed during the maximum limit acceleration of the airplane with a full tank, simultaneously with the application of the critical limit structural loads.

(3) Nonmetallic tanks the walls of which are supported by the airplane structure: tanks constructed of an acceptable basic tank material and type of construction and with actual or simulated support conditions shall be subjected to a pressure of 2 p. s. i. for the first tank of a specific design. Subsequent tanks shall be production tested to at least 0.5 p. s. i. The supporting structure shall be designed for the critical loads occurring in the flight or landing strength conditions combined with the fuel pressure loads resulting from the corresponding accelerations.

(b) Tanks with large unsupported or unstiffened flat areas shall be capable of withstanding the following tests without leakage or failure. The complete tank assembly, together with its supports, shall be subjected to a vibration test when mounted in a manner simulating the actual installation. The tank assembly shall be vibrated for 25 hours at a total amplitude of not less than 1/32 of an inch while filled ⅔ full of water. The frequency of vibration shall be 90 percent of the maximum continuous rated speed of the engine unless some other frequency within the normal operating range of speeds of the engine is more critical, in which case the latter speed shall be employed and the time of test shall be adjusted to accomplish the same number of vibration cycles.

In conjunction with the vibration test, the tank assembly shall be rocked through an angle of 15° on either side of the horizontal (30° total) about an axis parallel to the axis of the fuselage. The assembly shall be rocked at the rate of 16 to 20 complete cycles per minute.

(c) Integral tanks which incorporate methods of construction and sealing not previously substantiated by satisfactory test data or service experience shall be capable of withstanding the vibration test specified in paragraph (b) of this section.

(d) Tanks with nonmetallic liners shall be subjected to the sloshing portion of the test outlined under paragraph (b) of this section with fuel at room temperature.

In addition, a specimen liner of the same basic construction as that to be used in the airplane shall, when installed in a suitable test tank, satisfactorily

withstand the slosh test with fuel at a temperature of 110° F.

§ 03.4231 *Fuel tank installation.* (a) The method of support for tanks shall not be such as to concentrate the loads resulting from the weight of the fluid in the tanks. Pads shall be provided to prevent chafing between the tank and its supports. Materials employed for padding shall be nonabsorbent or shall be treated to prevent the absorption of fluids. If flexible tank liners are employed, they shall be so supported that the liner is not required to withstand fluid loads. Interior surfaces of compartments for such liners shall be smooth and free of projections which are apt to cause wear of the liner, unless provisions are made for protection of the liner at such points or unless the construction of the liner itself provides such protection.

(b) Tank compartments shall be ventilated and drained to prevent the accumulation of inflammable fluids or vapors. Compartments adjacent to tanks which are an integral part of the airplane structure shall also be ventilated and drained.

(c) Fuel tanks shall not be located on the engine side of the fire wall. Not less than ½ of an inch of clear air space shall be provided between the fuel tank and the fire wall. No portion of engine nacelle skin which lies immediately behind a major air egress opening from the engine compartment shall act as the wall of an integral tank. Fuel tanks shall not be located in personnel compartments, except in the case of single-engine airplanes. In such cases fuel tanks the capacity of which does not exceed 25 gallons may be located in personnel compartments, if adequate ventilation and drainage are provided. In all other cases, fuel tanks shall be isolated from personnel compartments by means of fume and fuel proof enclosures.

§ 03.4232 *Fuel tank construction.*

§ 03.42320 *Fuel tank expansion space.* Fuel tanks shall be provided with an expansion space of not less than 2 percent of the tank capacity, unless the tank vent discharges clear of the aircraft in which case no expansion space will be required. It shall not be possible inadvertently to fill the fuel tank expansion space when the airplane is in the normal ground attitude.

§ 03.42321 *Fuel tank sump.* (a) Each tank shall be provided with a drainable sump having a capacity of not less than 0.25 percent of the tank capacity or one-sixteenth of a gallon, whichever is greater. The sump may be dispensed with if the fuel system is provided with a sediment bowl which will permit visual ground inspection for accumulation of water or other foreign material. The sediment bowl shall also be readily accessible for drainage. The capacity of the sediment chamber shall not be less than one ounce per each 20 gallons of the fuel tank capacity.

(b) If a fuel tank sump is provided, the capacity specified above shall be effective with the airplane in the normal ground attitude.

(c) If a separate sediment bowl is provided, the fuel tank outlet shall be so located that water will drain from all portions of the tank to the outlet when the airplane is in the ground attitude.

§ 03.42322 *Fuel tank filler connection.* Fuel tank filler connections shall be marked as specified in § 03.6221.

Provision shall be made to prevent the entrance of spilled fuel into the fuel tank compartment or any portions of the airplane other than the tank itself. The filler cap shall provide a fuel-tight seal for the main filler opening. However, small openings in the fuel tank cap for venting purposes or to permit passage of a fuel gauge through the cap shall be permissible.

§ 03.42323 *Fuel tank vents and carburetor vapor vents.* (a) Fuel tanks shall be vented from the top portion of the expansion space. Vent outlets shall be so located and constructed as to minimize the possibility of their being obstructed by ice or other foreign matter. The vent shall be so constructed as to preclude the possibility of siphoning fuel during normal operation. The vent shall be of sufficient size to permit the rapid relief of excessive differences of pressure between the interior and exterior of the tank. Air spaces of tanks the outlets of which are interconnected shall also be interconnected. There shall be no undrainable points in the vent line where moisture is apt to accumulate with the airplane in either the ground or level flight attitude. Vents shall not terminate at points where the discharge of fuel from the vent outlet will constitute a fire hazard or from which fumes may enter personnel compartments.

(b) Carburetors which are provided with vapor elimination connections shall be provided with a vent line which will lead vapors back to one of the airplane fuel tanks. If more than one fuel tank is provided and it is necessary to use these tanks in a definite sequence for any reason, the vapor vent return line shall lead back to the fuel tank which must be used first unless the relative capacities of the tank are such that return to another tank is preferable.

§ 03.42324–A *Fuel tank vents.* Provision shall be made to prevent excessive loss of fuel during acrobatic maneuvers including short periods of inverted flight. It shall not be possible for fuel to siphon from the vent when normal flight has been resumed after having executed any acrobatic maneuver for which the airplane is intended.

§ 03.42325 *Fuel tank outlet.* The fuel tank outlet shall be provided with a screen of from 8 to 16 meshes per inch. If a finger strainer is used, the length of the strainer shall not be less than 4 times the outlet diameter. The diameter of the strainer shall not be less than the diameter of the fuel tank outlet. Finger strainers shall be accessible for inspection and cleaning.

§ 03.424 *Fuel pump and pump installation.* (a) If fuel pumps are provided to maintain a supply of fuel to the engine, at least one pump for each engine shall be directly driven by the engine. Fuel pumps shall be adequate to meet the flow requirements of the applicable portions of § 03.4220 and its related sections.

(b) Emergency fuel pumps shall be provided to permit supplying all engines with fuel in case of the failure of any one engine-driven pump, unless the engine-driven pumps have been approved with the engines, in which case emergency pumps need not be provided. Similarly, if an engine fuel injection pump which has been certificated as an integral part of the engine is used, an emergency pump will not be required. Emergency pumps shall be capable of complying with the same flow requirements as are prescribed for the main pumps. Hand emergency pumps shall not require excessive effort for their continued operation at the rate of 60 complete cycles (120 single strokes) per minute. Emergency pumps shall be available for immediate use in case of the failure of any other pump.

§ 03.425 *Fuel system lines, fittings, and accessories.* Fuel lines shall be installed and supported in a manner which will prevent excessive vibration and will be adequate to withstand loads due to fuel pressure and accelerated flight conditions. Lines which are connected to components of the airplane between which relative motion might exist shall incorporate provisions for flexibility. Flexible hose shall be of an acceptable type.

§ 03.4251 *Fuel valves.* (a) Means shall be provided to permit the flight personnel to shut off rapidly the flow of fuel to any engine individually in flight. Valves provided for this purpose shall be located on the side of the fire wall most remote from the engine.

(b) Shut-off valves shall be so constructed as to make it possible for the flight personnel to reopen the valves rapidly after they have once been closed.

(c) Valves shall be provided with either positive stops or "feel" in the on and off positions and shall be supported in such a manner that loads resulting from their operation or from accelerated flight conditions are not transmitted to the lines connected to the valve. Valves shall be so installed that the effect of gravity and vibration will tend to turn their handles to the open rather than the closed position.

§ 03.4252 *Fuel strainer.* A fuel strainer shall be provided between the fuel tank outlet and the carburetor inlet. If an engine-driven fuel pump is provided, the strainer shall be located between the tank outlet and the engine-driven pump inlet. The strainer shall be accessible for drainage and cleaning, and the strainer screen shall be removable.

§ 03.426 *Fuel system drains.* Drains shall be provided to permit safe drainage of the entire fuel system and shall incorporate means for locking in the closed position.

§ 03.427 *Fuel system instruments.* See § 03.51 and §§ 03.522 through 03.5223.

§ 03.43 *Oil system.* Each engine shall be provided with an independent oil system capable of supplying the engine with an ample quantity of oil at a temperature not exceeding the maximum which has been established as safe for continuous

operation. The oil capacity of the system shall not be less than one gallon for every 25 gallons of fuel capacity. However, in no case shall the oil capacity be less than one gallon for each 75 maximum continuous horsepower of the engine(s) involved unless lower quantities can be substantiated.

§ 03.430 *Oil cooling.* See § 03.44 and pertinent sections.

§ 03.431 *Oil tanks.* Oil tanks shall be capable of withstanding without failure all vibration, inertia, and fluid loads to which they might be subjected in operation. Flexible oil tank liners shall be of an acceptable type.

§ 03.4310 *Oil tank tests.* Oil tank tests shall be the same as fuel tank tests (see § 03.4230), except as follows:

(a) The 3.5 psi pressure specified in § 03.4230 (a) shall be 5 pounds psi.

(b) In the case of tanks with nonmetallic liners, the test fluid shall be oil rather than fuel as specified in § 03.4230 (d) and the slosh test on a specimen liner shall be conducted with oil at a temperature of 250° F.

§ 03.4311 *Oil tank installation.* Oil tank installations shall comply with the requirements of § 03.4231 (a) and (b).

§ 03.4312 *Oil tank construction.*

§ 03.43120 *Oil tank expansion space.* Oil tanks shall be provided with an expansion space of not less than 10 percent of the tank capacity or ½ gallon, whichever is greater. It shall not be possible inadvertently to fill the oil tank expansion space when the airplane is in normal ground attitude.

§ 03.43121 *Oil tank filler connection.* Oil tank filler connections shall be marked as specified in § 03.6221.

§ 03.43122 *Oil tank vent.* Oil tanks shall be vented to the engine crankcase from the top of the expansion space in such a manner that the vent connection is not covered by oil under any normal flight conditions. Oil tank vents shall be so arranged that condensed water vapor which might freeze and obstruct the line cannot accumulate at any point.

§ 03.43122–A *Oil tank vent.* Provision shall be made to prevent hazardous loss of oil during acrobatic maneuvers including short periods of inverted flight.

§ 03.43123 *Oil tank outlet.* The oil tank outlet shall not be enclosed or covered by any screen or other guard which might impede the flow of oil. The diameter of the oil tank outlet shall not be less than the diameter of the engine oil pump inlet. (See also § 03.436.)

§ 03.432 *Oil system lines, fittings, and accessories.* Oil lines shall comply with the provisions of § 03.425, except that the inside diameter of the engine oil inlet and outlet lines shall not be less than the diameter of the corresponding engine oil pump inlet and outlet.

§ 03.4321 *Oil valves.* See § 03.49.

§ 03.4322 *Oil radiators.* Oil radiators and their support shall be capable of withstanding without failure any vibration, inertia, and oil pressure loads to which they might normally be subjected.

§ 03.4323 *Oil filters.* If the engine is equipped with an oil filter, the filter shall be constructed and installed in such a manner that complete blocking of the flow through the filter element will not jeopardize the continued operation of the engine oil supply system.

§ 03.433 *Oil system drains.* Drains shall be provided to permit safe drainage of the entire oil system and shall incorporate means for positive locking in the closed position.

§ 03.434 *Engine breather lines.* Engine breather lines shall be so arranged that condensed water vapor which might freeze and obstruct the line cannot accumulate at any point. Breathers shall discharge in a location which will not constitute a fire hazard in case foaming occurs and so that oil emitted from the line will not impinge upon the pilot windshield. The breather shall not discharge into the engine air induction system.

§ 03.434–A *Engine breather lines.* In the case of acrobatic type airplanes, provision shall be made to prevent excessive loss of oil from the breather during acrobatic maneuvers including short periods of inverted flight.

§ 03.435 *Oil system instruments.* See §§ 03.51, 03.522 through 03.5221, and § 03.5224.

§ 03.436 *Propeller feathering system.* If the propeller feathering system is dependent upon the use of the engine oil supply, provision shall be made to trap a quantity of oil in the tank in case the supply becomes depleted due to failure of any portion of the lubricating system other than the tank itself. The quantity of oil so trapped shall be sufficient to accomplish the feathering operation and shall be available only to the feathering pump. The ability of the system to accomplish feathering when the supply of oil has fallen to the above level shall be demonstrated.

§ 03.44 *Cooling.* The power-plant cooling provisions shall be capable of maintaining the temperatures of all power-plant components, engine parts, and engine fluids (oil and coolant), at or below the maximum established safe values under critical conditions of ground and flight operation.

§ 03.440 *Cooling tests.* Compliance with the provisions of § 03.44 shall be demonstrated under critical ground, water, and flight operating conditions. If the tests are conducted under conditions which deviate from the highest anticipated summer air temperature (see § 03.4400), the recorded power-plant temperatures shall be corrected in accordance with the provisions of §§ 03.4401 and 03.4402. The corrected temperatures determined in this manner shall not exceed the maximum established safe values. The fuel used during the cooling tests shall be of the minimum octane number approved for the engines involved, and the mixture settings shall be those appropriate to the operating conditions. The test procedures shall be as outlined in §§ 03.4403 and 03.4404.

§ 03.4400 *Maximum anticipated summer air temperatures.* The maximum anticipated summer air temperature shall be considered to be 100° F. at sea level and to decrease from this value at the rate of 3.6° F. per thousand feet of altitude above sea level.

§ 03.4401 *Correction factor for cylinder head, oil inlet, carburetor air, and engine coolant inlet temperatures.* These temperatures shall be corrected by adding the difference between the maximum anticipated summer air temperature and the temperature of the ambient air at the time of the first occurrence of maximum head, air, oil, or coolant temperature recorded during the cooling test.

§ 03.4402 *Correction factor for cylinder barrel temperatures.* Cylinder barrel temperatures shall be corrected by adding 0.7 of the difference between the maximum anticipated summer air temperature and the temperature of the ambient air at the time of the first occurrence of the maximum cylinder barrel temperature recorded during the cooling test.

§ 03.4403 *Cooling test procedure for single-engine airplanes.* This test shall be conducted by stabilizing engine temperatures in flight and then starting at the lowest practicable altitude and climbing for one minute at take-off power. At the end of one minute, the climb shall be continued at maximum continuous power until at least 5 minutes after the occurrence of the highest temperature recorded. The climb shall not be conducted at a speed greater than the best rate-of-climb speed with maximum continuous power unless:

(a) The slope of the flight path at the speed chosen for the cooling test is equal to or greater than the minimum required angle of climb (see § 03.123 (a)), and

(b) A cylinder head temperature indicator is provided as specified in § 03.5225.

§ 03.4404 *Cooling test procedure for multiengine airplanes*—(a) *Airplanes which meet the minimum one-engine-inoperative climb performance specified in § 03.123 (b).* The engine cooling test for these airplanes shall be conducted with the airplane in the configuration specified in § 03.123 (b), except that the operating engine(s) shall be operated at maximum continuous power or at full throttle when above the critical altitude. After stabilizing temperatures in flight, the climb shall be started at the lower of the two following altitudes and shall be continued until at least 5 minutes after the highest temperature has been recorded:

(1) 1,000 feet below the engine critical altitude or at the lowest practicable altitude (when applicable).

(2) 1,000 feet below the altitude at which the single-engine-inoperative rate of climb is 0.02 V_{so}^2.

The climb shall be conducted at a speed not in excess of the highest speed at which compliance with the climb requirement of § 03.123 (b) can be shown. However, if the speed used exceeds the speed for best rate of climb with one engine inoperative, a cylinder head temperature indicator shall be provided as specified in § 03.5225.

(b) *Airplanes which cannot meet the minimum one-engine-inoperative climb performance specified in § 03.123 (b).* The engine cooling test for these airplanes shall be the same as in paragraph (a) of this section, except that after stabilizing temperatures in flight, the climb (or descent, in the case of airplanes with zero or negative one-engine-inoperative rate of climb) shall be commenced at as near sea level as practicable and shall be conducted at the best rate-of-climb speed (or the speed of minimum rate of descent, in the case of airplanes with zero or negative one-engine-inoperative rate of climb).

§ 03.441 *Liquid cooling systems.* Each liquid cooled engine shall be provided with an independent cooling system. The cooling system shall be so arranged that no air or vapor can be trapped in any portion of the system, except the expansion tank, either during filling or during operation.

§ 03.4410 *Coolant tank.* A coolant tank shall be provided. The tank capacity shall not be less than one gallon plus 10 percent of the cooling system capacity. Coolant tanks shall be capable of withstanding without failure all vibration, inertia, and fluid loads to which they may be subjected in operation. Coolant tanks shall be provided with an expansion space of not less than 10 percent of the total cooling system capacity. It shall not be possible inadvertently to fill the expansion space with the airplane in the normal ground attitude.

§ 03.44100 *Coolant tank tests.* Coolant tank tests shall be the same as fuel tank tests (see § 03.4230), except as follows:

(a) The 3.5 psi pressure test of § 03.4230 (a) shall be replaced by the sum of the pressure developed during the maximum ulitmate acceleration with a full tank or a pressure of 3.5 psi, whichever is greater, plus the maximum working pressure of the system.

(b) In the case of tanks with nonmetallic liners, the test fluid shall be coolant rather than fuel as specified in § 03.4230 (d), and the slosh test on a specimen liner shall be conducted with coolant at operating temperature.

§ 03.44101 *Coolant tank installation.* Coolant tanks shall be supported in a manner so as to distribute the tank loads over a large portion of the tank surface. Pads shall be provided to prevent chafing between the tank and the support. Material used for padding shall be nonabsorbent or shall be treated to prevent the absorption of inflamable fluids.

§ 03.44102 *Coolant tank filler connection.* Coolant tank filler connections shall be marked as specified in § 03.6221. Provisions shall be made to prevent the entrance of spilled coolant into the coolant tank compartment or any portions of the airplane other than the tank itself. Recessed coolant filler connections shall be drained and the drain shall discharge clear of all portions of the airplane.

§ 03.4411 *Coolant lines, fittings, and accessories.* Coolant lines shall comply with the provisions of § 03.425, except that the inside diameter of the engine coolant inlet and outlet lines shall not be less than the diameter of the corresponding engine inlet and outlet connections.

§ 03.44111 *Coolant radiators.* Coolant radiators shall be capable of withstanding without failure any vibration, inertia, and coolant pressure loads to which they may normally be subjected. Radiators shall be supported in a manner which will permit expansion due to operating temperatures and prevent the transmittal of harmful vibration to the radiator. If the coolant employed is inflammable, the air intake duct to the coolant radiator shall be so located that flames issuing from the nacelle in case of fire cannot impinge upon the radiator.

§ 03.4412 *Cooling system drains.* One or more drains shall be provided to permit drainage of the entire cooling system, including the coolant tank, radiator, and the engine, when the airplane is in the normal ground attitude. Drains shall discharge clear of all portions of the airplane and shall be provided with means for positively locking the drain in the closed position. Cooling system drains shall be accessible.

§ 03.4413 *Cooling system instruments.* See §§ 03.51, 03.522 through 03.5221.

§ 03.45 *Induction system.* The engine air induction system shall permit supplying an adequate quantity of air to the engine under all conditions of operation.

Each engine shall be provided with at least 2 separate air intake sources, except that in the case of an engine equipped with a fuel injector only one air intake source need be provided, if the air intake, opening, or passage is unobstructed by a screen, filter, or other part on which ice might form and so restrict the airflow as to affect adversely engine operation. Primary and alternate air intakes may open within the cowling only if that portion of the cowling is isolated from the engine accessory section by means of a fireproof diaphragm. Alternate air intakes shall be located in a sheltered position. Supplying air to the engine through the alternate air intake system or the carburetor air preheater shall not result in the loss of excessive power in addition to the power lost due to the rise in the temperature of the air.

§ 03.450 *Induction system de-icing and anti-icing provisions.* The engine air induction system shall incorporate means for the prevention and elimination of ice accumulations in accordance with the following provisions. It shall be demonstrated that compliance with the provisions outlined in the following paragraphs can be accomplished when the airplane is operating in air at a temperature of 30° F. when the air is free of visible moisture.

(a) Airplanes equipped with sea level engines employing conventional venturi carburetors shall be provided with a preheater capable of providing a heat rise of 90° F. when the engine is operating at 75 percent of its maximum continuous power.

(b) Airplanes equipped with altitude engines employing conventional venturi carburetors shall be provided with a preheater capable of providing a heat rise of 120° F. when the engine is operating at 75 percent of its maximum continuous power.

(c) Airplanes equipped with altitude engines employing carburetors which embody features tending to reduce the possibility of ice formation shall be provided with a preheater capable of providing a heat rise of 100° F. when the engine is operating at 60 percent of its maximum continuous power. However, the preheater need not provide a heat rise in excess of 40° F. if a fluid de-icing system complying with the provisions of §§ 03.4501 through 03.4503 is also installed.

§ 03.4501 *Carburetor de-icing fluid flow rate.* The system shall be capable of providing each engine with a rate of fluid flow, expressed in pounds per hour, of not less than 2.5 multiplied by the square root of the maximum continuous power of the engine. This flow shall be available to all engines simultaneously. The fluid shall be introduced into the air induction system at a point close to, and upstream from, the carburetor. The fluid shall be introduced in a manner to assure its equal distribution over the entire cross section of the induction system air passages.

§ 03.4502 *Carburetor fluid de-icing system capacity.* The fluid de-icing system capacity shall not be less than that required to provide fluid at the rate specified in § 03.4501 for a time equal to 3 percent of the maximum endurance of the airplane. However, the capacity need not in any case exceed that required for 2 hours of operation nor shall it be less than that required for 20 minutes of operation at the above flow rate. If the available preheat exceeds 50° F. but is less than 100° F., it shall be permissible to decrease the capacity of the system in proportion to the heat rise available in excess of 50° F.

§ 03.4503 *Carburetor fluid de-icing system detail design.* Carburetor fluid de-icing systems shall comply with provisions for the design of fuel systems, except as heretofore specified, unless such provisions are manifestly inapplicable.

§ 03.451 *Carburetor air preheater design.* Means shall be provided to assure adequate ventilation of the carburetor air preheater when the engine is being operated in cold air. The preheater shall be constructed in such a manner as to permit inspection of exhaust manifold parts which it surrounds and also to permit inspection of critical portions of the preheater itself.

§ 03.452 *Induction system ducts.* Induction system ducts shall be provided with drains which will prevent the accumulation of fuel or moisture in all normal ground and flight attitudes. No open drains shall be located on the pressure side of turbo-supercharger installations. Drains shall not discharge in a location which will constitute a fire hazard. Ducts which are connected to components of the airplane between which relative motion may exist shall incorporate provisions for flexibility.

§ 03.453 *Induction system screens.* If induction system screens are employed, they shall be located upstream from the carburetor. It shall not be possible for fuel to impinge upon the screen. Screens shall not be located in portions of the induction system which constitute the only passage through which air can reach the engine, unless the available preheat is 100° F. or over and the screen is so located that it can be de-iced by the application of heated air. De-icing of screens by means of alcohol in lieu of heated air shall not be acceptable.

§ 03.46 *Exhaust system.* The exhaust system shall be constructed and arranged in such a manner as to assure the safe disposal of exhaust gases without the existence of a hazard of fire or carbon monoxide contamination of air in personnel compartments.

Unless suitable precautions are taken, exhaust system parts shall not be located in close proximity to portions of any systems carrying inflammable fluids or vapors nor shall they be located under portions of such systems which may be subject to leakage. All exhaust system components shall be separated from adjacent inflammable portions of the airplane which are outside the engine compartment by means of fireproof shields. Exhaust gases shall not be discharged at a location which will cause a glare seriously affecting pilot visibility at night, nor shall they discharge within dangerous proximity of any fuel or oil system drains. All exhaust system components shall be ventilated to prevent the existence of points of excessively high temperature.

§ 03.460 *Exhaust manifold.* Exhaust manifolds shall be made of fireproof, corrosive resistant materials and shall incorporate provisions to prevent failure due to their expansion when heated to operating temperatures. Exhaust manifolds shall be supported in a manner adequate to withstand all vibration and inertia loads to which they might be subjected in operation. Portions of the manifold which are connected to components between which relative motion might exist shall incorporate provisions for flexibility.

§ 03.461 *Exhaust heat exchangers.* Exhaust heat exchangers shall be constructed and installed in such a manner as to assure their ability to withstand without failure all vibration, inertia, and other loads to which they might normally be subjected. Heat exchangers shall be constructed of materials which are suitable for continued operation at high temperatures and which are adequately resistant to corrosion due to products contained in exhaust gases.

Provisions shall be made for the inspection of all critical portions of exhaust heat exchangers, particularly if a welded construction is employed. Heat exchangers shall be ventilated under all conditions in which they are subject to contact with exhaust gases.

§ 03.4610 *Exhaust heat exchangers used in ventilating air heating systems.* Heat exchangers of this type shall be so constructed as to preclude the possibility of exhaust gases entering the ventilating air.

§ 03.47 *Fire wall and cowling.*

§ 03.470 *Fire walls.* All engines, auxiliary power units, fuel burning heaters, and other combustion equipment which are intended for operation in flight shall be isolated from the remainder of the airplane by means of fire walls, or shrouds, or other equivalent means.

§ 03.4700 *Fire wall construction.* Fire walls and shrouds shall be constructed in such a manner that no hazardous quantity of air, fluids, or flame can pass from the engine compartment to other portions of the airplane. All openings in the fire wall or shroud shall be sealed with close-fitting fireproof grommets, bushings, or fire wall fittings.

Fire walls and shrouds shall be constructed of fireproof material and shall be protected against corrosion. The following materials have been found to comply with this requirement:

(a) Heat and corrosion resistant steel 0.015 inch thick,

(b) Low carbon steel, suitably protected against corrosion, 0.018 inch thick.

§ 03.471 *Cowling.* Cowling shall be constructed and supported in such a manner as to be capable of resisting all vibration, inertia, and air loads to which it may normally be subjected. Provision shall be made to permit rapid and complete drainage of all portions of the cowling in all normal ground and flight attitudes. Drains shall not discharge in locations constituting a fire hazard.

Cowling shall be constructed of fire-resistant material. All portions of the airplane lying behind openings in the engine compartment cowling shall also be constructed of fire-resistant materials for a distance of at least 24 inches aft of such openings. Portions of cowling which are subjected to high temperatures due to proximity to exhaust system ports or exhaust gas impingement shall be constructed of fireproof material.

§ 03.48 *Power-plant controls and accessories.*

§ 03.480 *Power-plant controls.* Power-plant controls shall comply with the provisions of §§ 03.3802 and 03.6202. Controls shall maintain any necessary position without constant attention by the flight personnel and shall not tend to creep due to control loads or vibration. Flexible controls shall be of an acceptable type. Controls shall have adequate strength and rigidity to withstand operating loads without failure or excessive deflection.

§ 03.4800 *Throttle controls.* A throttle control shall be provided to give independent control for each engine. Throttle controls shall afford a positive and immediately responsive means of controlling the engine(s). Throttle controls shall be grouped and arranged in such a manner as to permit separate control of each engine and also simultaneous control of all engines.

§ 03.4801 *Ignition switches.* Ignition switches shall provide control for each ignition circuit on each engine. It shall be possible to shut off quickly all ignition on multiengine airplanes either by grouping of the individual switches or by providing a master ignition control. If a master control is provided, suitable means shall be incorporated to prevent its inadvertent operation.

§ 03.4802 *Mixture controls.* If mixture controls are provided, a separate control shall be provided for each engine. The controls shall be grouped and arranged in such a manner as to permit both separate and simultaneous control of all engines.

§ 03.4803 *Propeller speed and pitch controls.* (See also § 03.41112 (a)). If propeller speed or pitch controls are provided, the controls shall be grouped and arranged in such a manner as to permit control of all propellers, both separately and together. The controls shall permit ready synchronization of all propellers on multiengine airplanes.

§ 03.48030 *Propeller feathering controls.* If propeller feathering controls are provided, a separate control shall be provided for each propeller. Propeller feathering controls shall be provided with means to prevent inadvertent operation.

§ 03.4804 *Fuel system controls.* Fuel system controls shall comply with requirements of § 03.4251 (c).

§ 03.4805 *Carburetor air preheat controls.* Separate controls shall be provided to regulate the temperature of the carburetor air for each engine.

§ 03.481 *Power-plant accessories.* Engine-driven accessories shall be of a type satisfactory for installation on the engine involved and shall utilize the provisions made on the engine for the mounting of such units. Items of electrical equipment subject to arcing or sparking shall be installed so as to minimize the possibility of their contact with any inflammable fluids or vapors which might be present in a free state.

§ 03.4810 *Engine battery ignition systems.* (a) Battery ignition systems shall be supplemented with a generator which is automatically made available as an alternate source of electrical energy to permit continued engine operation in the event of the depletion of any battery.

(b) The capacity of batteries and generators shall be sufficient to meet the simultaneous demands of the engine ignition system and the greatest demands of any of the airplane's electrical system components which may draw electrical energy from the same source. Consideration shall be given to the condition of an inoperative generator, and to the condition of a completely depleted battery when the generator is running at its normal operating speed. If only one battery is provided, consideration shall also be given to the condition in which the battery is completely depleted and the generator is operating at idling speed.

(c) Means shall be provided to warn the appropriate flight personnel if malfunctioning of any part of the electrical system is causing the continuous dis-

charging of a battery used for engine ignition. (See § 03.4801 for ignition switches.)

§ 03.49 *Power-plant fire protection.* Suitable means shall be provided to shut off the flow in all lines carrying inflammable fluids into the engine compartment.

§ 03.5 *Equipment.*

§ 03.50 *General.* The equipment specified in § 03.51 shall be the minimum installed when the airplane is submitted to determine its compliance with the airworthiness requirements. Such additional equipment as is necessary for a specific type of operation is specified in other pertinent parts of the Civil Air Regulations, but, where necessary, its installation and that of the items mentioned in § 03.51 is covered herein.

§ 03.500 *Functional and installational requirements.* Each item of equipment which is essential to the safe operation of the airplane shall be found by the Administrator to perform adequately the functions for which it is to be used, shall function properly when installed, and shall be adequately labeled as to its identification, function, operational limitations, or any combination of these, whichever is applicable. Items of equipment for which type certification is required shall have been certificated in accordance with the provisions of Part 15 (or previous regulations) and such other parts as may be applicable.

§ 03.51 *Required basic equipment.* The following table shows the basic equipment items required for type and airworthiness certification of an airplane:

(a) *Flight and navigational instruments.* (1) Airspeed indicator (See § 03.5210).
(2) Altimeter.
(3) Magnetic direction indicator (See § 03.5213).
(b) *Power-plant instrument*—(1) *For each engine or tank.* (i) Fuel quantity indicator (See § 03.5222).
(ii) Oil pressure indicator.
(iii) Oil temperature indicator.
(iv) Tachometer.
(2) *For each engine or tank (if required in reference section).* (i) Carburetor air temperature indicator (see § 03.5226).
(ii) Coolant temperature indicator (if liquid-cooled engines used).
(iii) Cylinder head temperature indicator (see § 03.5225).
(iv) Fuel pressure indicator (if pump-fed engines used).
(v) Manifold pressure indicator (if altitude engines used).
(vi) Oil quantity indicator (see § 03.5224).
(c) *Electrical equipment (if required by reference section).* (1) Master switch arrangement (see § 03.532).
(2) Adejuate source(s) of electrical energy (see §§ 03.530 and 03.531).
(3) Electrical protective devices (see § 03.533).
(d) *Miscellaneous equipment.* (1) Certificated safety belts for all occupants (see Part 15).
(2) Airplane Flight Manual (see § 03.63).

§ 03.52 *Instruments—installation.*

§ 03.520 *General.*

§ 03.5200 *Arrangement and visibility of instrument installations.* (a) Flight, navigation, and power-plant instruments for use by each pilot shall be easily visible to him.

(b) On multiengine airplanes, identical power-plant instruments for the several engines shall be so located as to prevent any confusion as to the engines to which they relate.

§ 03.5201 *Instrument panel vibration characteristics.* Vibration characteristics of the instrument panel shall not be such as to impair the accuracy of the instruments or to cause damage to them.

§ 03.521 *Flight and navigational instruments.*

§ 03.5210 *Air-speed indicating system.* This system shall be so installed that the air-speed indicator shall indicate true air speed at sea level under standard conditions to within an allowable installational error of not more than plus or minus 3 percent of the calibrated air speed or 5 mph, whichever is greater, throughout the operating range of the airplane with flaps up from V_c to 1.3 V_{s1} and with flaps down at 1.3 V_{s1}. The calibration shall be made in flight.

§ 03.5211 *Air-speed indicator marking.* The air-speed indicator shall be marked as specified in § 03.6200.

§ 03.5212 *Static air vent system.* All instruments provided with static air case connections shall be so vented that the influence of airplane speed, the opening and closing of windows, air flow variation, moisture, or other foreign matter will not seriously affect their accuracy.

§ 03.5213 *Magnetic direction indicator.* The magnetic direction indicator shall be so installed that its accuracy shall not be excessively affected by the airplane's vibration or magnetic fields. After the direction indicator has been compensated, the installation shall be such that the deviation in level flight does not exceed 10° on any heading. A suitable calibration placard shall be provided as specified in § 03.6201.

§ 03.5214 *Automatic pilot system.* If an automatic pilot system is installed:

(a) The actuating (servo) devices shall be of such design that they can, when necessary, be positively disengaged from operating the control system or be overpowered by the human pilot to enable him to maintain satisfactory control of the airplane.

(b) A satisfactory means shall be provided to indicate readily to the pilot the alignment of the actuating device in relation to the control system which it operates, except when automatic synchronization is provided.

(c) The manually operated control(s) for the system's operation shall be readily accessible to the pilot.

(d) The automatic pilot system shall be of such design and so adjusted that it cannot produce loads in the control system and surfaces greater than those for which they were designed.

§ 03.5215 *Gyroscopic indicators (air-driven type).* All air-driven gyroscopic instruments installed in airplanes which are certificated for instrument flight operations shall derive their energy from a reliable suction source of sufficient capacity to maintain their required accuracy at all speeds above the best rate-of-climb speed. In addition the system shall be so installed as to preclude malfunctioning due to rain, oil, or other detrimental elements. On multiengine airplanes, the following detail requirements shall be applicable:

(a) Two sources actuated by separate means shall be provided, either one of which shall be of sufficient capacity to operate all of the air-driven gyroscopic instruments with which the airplane is equipped, with the airplane in normal cruising attitude at 65 percent maximum continuous power.

(b) A suitable means shall be provided in the attendant installation where the source lines connect into a common line to select either suction air source for the proper functioning of the instruments should failure of one source or a breakage of one source line occur. When an automatic means to permit simultaneous air flow is provided in the system, a suitable method for maintaining suction shall be provided. In order to indicate which source of energy has failed, a visual means shall be provided to indicate this condition to the flight crew.

§ 03.5216 *Suction gauge.* A suction gauge shall be provided and so installed as to indicate readily to the flight crew while in flight the suction in inches of mercury which is being applied to the air-driven types of gyroscopic instruments. This gauge shall be connected to the instruments by a suitable system.

§ 03.522 *Power-plant instruments.*

§ 03.5220 *Operational markings.* Instruments shall be marked as specified in § 03.6202.

§ 03.5221 *Instrument lines.* Power-plant instrument lines shall comply with the provisions of § 03.425. In addition, instrument lines carrying inflammable fluids or gases under pressure shall be provided with restricted orifices or other safety devices at the source of the pressure to prevent escape of excessive fluid or gas in case of line failure.

§ 03.5222 *Fuel quantity indicator.* Means shall be provided to indicate to the flight personnel the quantity of fuel in each tank during flight. Tanks, the outlets and air spaces of which are interconnected, may be considered as one tank and need not be provided with separate indicators. Exposed sight gauges shall be so installed and guarded as to preclude the possibility of breakage or damage. Fuel quantity indicators shall be calibrated to read zero during level flight when the quantity of fuel remaining in the tank is equal to the unusable fuel supply as defined by § 03.4221.

§ 03.5223 *Fuel flowmeter system.* When a fuel flowmeter system is installed in the fuel line(s), the metering component shall be of such design as to include a suitable means for by-passing the fuel supply in the event that malfunctioning of the metering component offers a severe restriction to fuel flow.

§ 03.5224 *Oil quantity indicator.* Ground means, such as a stick gauge, shall be provided to indicate the quantity of oil in each tank. If an oil transfer system or a reserve oil supply system is

installed, means shall be provided to indicate to the flight personnel during flight the quantity of oil in each tank.

§ 03.5225 *Cylinder head temperature indicating system for air-cooled engines.* A cylinder head temperature indicator shall be provided for each engine on airplanes equipped with cowl flaps. In the case of airplanes which do not have cowl flaps, an indicator shall be provided if compliance with the provisions of § 03.44 is demonstrated at a speed in excess of the speed of best rate of climb.

§ 03.5226 *Carburetor air temperature indicating system.* A carburetor air temperature indicating system shall be provided for each altitude engine equipped with a preheater which is capable of providing a heat rise in excess of 60° F.

§ 03.53 *Electrical systems and equipment—Installation.* Electrical systems in airplanes shall be free from hazards in themselves, in their method of operation, and in their effects on other parts of the airplane. Electrical equipment shall be of a type and design adequate for the use intended. Electrical systems shall be installed in such a manner that they are suitably protected from fuel, oil, water, other detrimental substances, and mechanical damage.

Items of electrical equipment required for a specific type of operation are listed in other pertinent parts of the Civil Air Regulations.

§ 03.530 *Batteries.* When an item of electrical equipment which is essential to the safe operation of the airplane is installed, the battery required shall have sufficient capacity to supply the electrical power necessary for dependable operation of the connected electrical equipment.

§ 03.5300 *Protection against acid.* If batteries are of such a type that corrosive substance may escape during servicing or flight, means such as a completely enclosed compartment shall be provided to prevent such substances from coming in contact with other parts of the airplane which are essential to safe operation. Batteries shall be accessible for servicing and inspection on the ground.

§ 03.5301 *Battery vents.* The battery container or compartment shall be vented in such manner that gases released by the battery are carried outside the airplane.

§ 03.531 *Generator.* Generators shall be capable of delivering their continuous rated power.

§ 03.5310 *Generator controls.* Generator voltage control equipment shall be capable of dependably regulating the generator output within rated limits.

§ 03.5311 *Reverse current cutout.* A generator reverse current cutout shall disconnect the generator from the battery and other generators when the generator is developing a voltage of such value that current sufficient to cause malfunctioning can flow into the generator.

§ 03.532 *Master switch.* If electrical equipment is installed, a master switch arrangement shall be provided which will disconnect all sources of electrical power from the main distribution system at a point adjacent to the power sources.

§ 03.5320 *Master switch installation.* The master switch or its controls shall be so installed that it is easily discernible and accessible to a member of the crew in flight.

§ 03.533 *Protective devices.* If electrical equipment is installed, protective devices (fuses or circuit breakers) shall be installed in the circuits to all electrical equipment, except that such items need not be installed in the main circuits of starter motors or in other circuits where no hazard is presented by their omission.

§ 03.5330 *Protective devices installation.* Protective devices in circuits essential to safety in flight shall be so located and identified that fuses may be replaced or circuit breakers reset readily in flight.

§ 03.5331 *Spare fuses.* If fuses are used, one spare of each rating or 50% spare fuses of each rating, whichever is greater, shall be provided.

§ 03.534 *Electric cables.* If electrical equipment is installed, the connecting cables used shall be in accordance with recognized standards for electric cable of a slow burning type and of suitable capacity.

§ 05.535 *Switches.* Switches shall be capable of carrying their rated current and shall be of such construction that there is sufficient distance or insulating material between current carrying parts and the housing so that vibration in flight will not cause shorting.

§ 03.5350 *Switch installation.* Switches shall be so installed as to be readily accessible to the appropriate crew member and shall be suitably labeled as to operation and the circuit controlled.

§ 03.536 *Instrument lights.* If instrument lights are required, they shall be of such construction that there is sufficient distance or insulating material between current carrying parts and the housing so that vibration in flight will not cause shorting. They shall provide sufficient illumination to make all instruments and controls easily readable and discernible, respectively.

§ 03.5360 *Instrument light installation.* Instrument lights shall be installed in such a manner that their direct rays are shielded from the pilot's eyes. Direct rays shall not be reflected from the windshield or other surfaces into the pilot's eyes.

§ 03.537 *Landing lights.* If landing lights are installed, they shall be of an acceptable type.

§ 03.5370 *Landing light installation.* Landing lights shall be so installed that there is no dangerous glare visible to the pilot and also so that the pilot is not seriously affected by halation. They shall be installed at such a location that they provide adequate illumination for night landing.

§ 03.538 *Position lights.* If position lights are installed, they shall be of a type certificated in accordance with Part 15, or shall comply with the pertinent provisions of that part.

§ 03.5380 *Forward position light installation.* Forward position lights shall be so installed that, with the airplane in normal flying position, the red light is displayed on the left side and the green light on the right side, each showing unbroken light between two vertical planes the dihedral angle of which is 100° when measured to the left and right, respectively, of the airplane from dead ahead. The lights shall be spaced laterally as far apart as practicable.

§ 03.5381 *Rear position light installation.* The rear position light shall be mounted as far aft as practicable and so installed that unbroken light is directed symmetrically aft in such a manner that the axis of the maximum cone of illumination is parallel to the flight path. In addition, the intersection of the two planes forming dihedral angle A given in Part 15 of the Civil Air Regulations shall be vertical.

§ 03.5382 *Flashing rear position lights.* If red and white flashing lights are used, in addition to meeting the installation requirements above, they shall be located close together.

§ 03.539 *Anchor light.* When an anchor light is required for seaplanes and amphibians, at least one light shall be provided and it shall be capable of showing a white light for at least 2 miles at night under clear atmospheric conditions.

§ 03.5390 *Anchor light installation.* Anchor lights shall be so installed that they will show the maximum unbroken light practicable when the airplane is moored or drifting on the water. Externally hung lights are permitted.

§ 03.54 *Safety equipment—installation.*

§ 03.540 *Marking.* Required safety equipment which the crew is expected to operate at a time of emergency, such as flares and automatic life raft releases, shall be readily accessible and plainly marked as to its method of operation. When such equipment is carried in lockers, compartments, or other storage places, such storage places shall be marked for the benefit of passengers and crew.

§ 03.541 *De-icers.* When pneumatic de-icers are installed, the installation shall be in accordance with approved data. Positive means shall be provided for the deflation of the pneumatic boots.

§ 03.542 *Flares.*

§ 03.5420 *Flare requirements.* When parachute flares are required, they shall be of a type certificated in accordance with Part 15.

§ 03.5421 *Flare installation.* Parachute flares shall be releasable from the pilot compartment and so installed that danger of accidental discharge is reduced to a minimum. The installation shall be demonstrated in flight to eject flares satisfactorily, except in those cases where inspection indicates a ground test will be adequate. If the flares are ejected so

that recoil loads are involved, structural provisions for such loads shall be made.

§ 03.543 *Safety belts.* Safety belts shall be of a type certificated in accordance with Part 15. They shall be so attached that no part of the anchorage will fail at a lower load than that specified in § 03.3811.

§ 03.544 *Emergency flotation and signaling equipment.*

§ 03.5440 *Rafts and life preservers.* An approved life raft or approved life preserver, when required by other parts of the Civil Air Regulations, is one approved by either the Administrator, the Bureau of Marine Inspection and Navigation, the U. S. Army Air Forces, or the Bureau of Aeronautics, Navy Department.

§ 03.5441 *Installation.* When such emergency equipment is required, it shall be so installed as to be readily available to the crew and passengers. Rafts released automatically or by the pilot shall be attached to the airplane by means of a line to keep them adjacent to the airplane. The strength of the line shall be such that it will break before submerging the empty craft.

§ 03.5442 *Signaling device.* Signaling devices, when required by other parts of the Civil Air Regulations, shall be accessible, function satisfactorily, and be free from any hazard in their operation.

§ 03.55 *Radio equipment; installation.*

§ 03.550 *General.* Radio equipment and installations in the airplane shall be free from hazards in themselves, in their method of operation, and in their effects on other components of the airplane.

§ 03.56 *Miscellaneous equipment; installation.*

§ 03.560 *Accessories for multiengine airplanes.* Engine driven accessories essential to the safe operation of the airplane shall be so distributed among two or more engines that the failure of any one engine will not impair the safe operation of the airplane by the malfunctioning of these accessories.

§ 03.561 *Hydraulic systems.*

§ 03.5610 *General.* Hydraulic systems and elements shall be so designed as to withstand, without exceeding the yield point, any structural loads which might be imposed in addition to the hydraulic loads.

§ 03.5611 *Tests.* Hydraulic systems shall be substantiated by proof pressure tests. When proof test, no part of the hydraulic system shall fail, malfunction, or experience a permanent set. The proof load of any system shall be 1.5 times the maximum operating pressure of that system.

§ 03.5612 *Accumulators.* Hydraulic accumulators or pressurized reservoirs shall not be installed on the engine side of the fire wall, except when they form an integral part of the engine or propeller.

§ 03.6 *Operating limitations and information.*

§ 03.60 *General.* Means shall be provided to inform adequately the pilot and other appropriate crew members of all operating limitations upon which the type design is based. Any other information concerning the airplane found by the Administrator to be necessary for safety during its operation shall also be made available to the crew. (See §§ 03.62 and 03.63.)

§ 03.61 *Limitations.* The operating limitations specified in the following subsections and any similar limitations shall be established for any airplane and made available to the operator as further described in §§ 03.62 and 03.63, unless its design is such that they are unnecessary for safe operation.

§ 03.610 *Air speed.* The following airspeed limitations shall be established:

§ 03.6101 *Never exceed speed.* (V_{ne}). This speed shall not exceed the lesser of the following:

(a) 0.9 V_d chosen in accordance with § 03.2110.

(b) 0.9 times the maximum speed demonstrated in accordance with § 03.15, but shall not be less than 0.9 times the minimum value of V_d permitted by § 03.2110.

§ 03.6102 *Maximum structural cruising speed.* (V_{no}). This operating limitation shall be:

(a) Not greater than V_c chosen in accordance with § 03.2110,

(b) Not greater than 0.89 times V_{ne} established under § 03.6101,

(c) Not less than the minimum V_c permitted in § 03.2110.

§ 03.6103 *Maneuvering speed.* (V_p) (See § 03.2110.)

§ 03.6104 *Flaps extended speed.* (V_{fe}) This speed shall not exceed the lesser of the following:

(a) The design flap speed, V_f, chosen in accordance with § 03.212,

(b) The flap design speed chosen in accordance with § 03.224, but shall not be less than the minimum value of flap design speed permitted in §§ 03.212 and 03.224

Additional combinations of flap setting, air speed, and engine power may be established, provided the structure has been proven for the corresponding design conditions.

§ 03.6105 *Minimum control speed.* (V_{mc}) (See § 03.1312.)

§ 03.611 *Power plant.* The following power-plant limitations shall be established and shall not exceed the corresponding limits established as a part of the type certification of the engine and propeller installed in the airplane.

§ 03.6111 *Take-off operation.* (a) Maximum rotational speed (rpm).

(b) Maximum permissible manifold pressure (if applicable).

(c) The time limit upon the use of the corresponding power.

(d) Where the time limit of Item (c) exceeds 2 minutes, the maximum allowable temperatures for cylinder head, oil, and coolant outlet if applicable.

§ 03.6112 *Maximum continuous operation.* (a) Maximum rotational speed (rpm).

(b) Maximum permissible manifold pressure (if applicable).

(c) Maximum allowable temperatures for cylinder head, oil, and coolant outlet if applicable.

§ 03.6113 *Fuel octane rating.* The minimum octane rating of fuel required for satisfactory operation of the power plant at the limits of §§ 03.6111 and 03.6112.

§ 03.612 *Airplane weight.* The airplane weight and c. g. limitations are those required to be determined by § 03.11.

§ 03.613 *Minimum flight crew.* The minimum flight crew shall be established as that number of persons required for the safe operation of the airplane during any contact flight as determined by the availability and satisfactory operation of all necessary controls by each operator concerned.

§ 03.614 *Types of operation.* The type of operation to which the airplane is limited shall be established by the category in which it has been found eligible for certification and by the equipment installed. (See Parts 42 and 43 of this chapter.)

§ 03.62 *Markings and placards.* The markings and placards specified are required for all airplanes. Placards shall be displayed in a conspicuous place and both shall be such that they cannot be easily erased, disfigured, or obscured. Additional informational placards and instrument markings having a direct and important bearing on safe operation may be required by the Administrator when unusual design, operating, or handling characteristics so warrant.

When an airplane is certificated in more than one category, the applicant shall select one category on which all placards and markings on the airplane shall be based. The placard and marking information for the other categories in which the airplane is certificated shall be entered in the Airplane Flight Manual. A reference to this information shall be included on a placard which shall also indicate the category on which the airplane placards and markings are based.

§ 03.620 *Instrument markings.* The instruments listed below shall have the following limitations marked thereon. When these markings are placed on the cover glass of the instrument, adequate provision shall be made to maintain the correct alignment of the glass cover with the face of the dial. All areas and lines shall be of sufficient width and so located as to be clearly and easily visible to the pilot.

§ 03.6200 *Air-speed indicator.* True indicated air speed shall be used. (a) The never exceed speed, V_{ne},—a radial red line (See § 03.6101),

(b) The caution range—a yellow arc extending from the red line in (a) above to the upper limit of the green arc specified in (c) below,

(c) The normal operating range—a green arc with the lower limit at V_{s1}, as determined in § 03.121 with maximum weight, landing gear and wing flaps retracted, and the upper limit at the maximum structural cruising speed established in § 03.6102,

(d) The flap operating range—a white arc with the lower limit at V_{s0} as determined in § 03.121 at the maximum weight, and the upper limit at the flaps extended speed in § 03.6104.

When the never exceed and maximum structural cruising speeds vary with altitude, means shall be provided which will indicate the appropriate limitations to the pilot throughout the operating altitude range.

§ 03.6201 *Magnetic direction indicator.* A placard shall be installed on or in close proximity to the magnetic direction indicator which contains the calibration of the instrument in a level flight attitude with engine(s) operating and radio receiver(s) on or off (which shall be stated). The calibration readings shall be those to known magnetic headings in not greater than 30° increments.

§ 03.6202 *Power-plant instruments.* All required power-plant instruments shall be marked with a red radial line at the maximum and minimum (if applicable) indications for safe operation. The normal operating ranges shall be marked with a green arc which shall not extend beyond the maximum and minimum limits for continuous operation. Take-off and precautionary ranges shall be marked with a yellow arc.

§ 03.6203 *Oil quantity indicators.* Indicators shall be suitably marked in sufficient increments so that they will readily and accurately indicate the quantity of oil.

§ 03.6204 *Fuel quantity indicator.* When the unusable fuel supply for any tank exceeds one gallon or 5 percent of the tank capacity, whichever is greater, a red band shall be placed on the indicator extending from the calibrated zero reading (see § 03.4221) to the lowest reading obtainable in the level flight attitude, and a suitable notation in the Airplane Flight Manual shall be provided to indicate to the flight personnel that the fuel remaining in the tank when the quantity indicator reaches zero cannot be used safely in flight. (See § 03.5222.)

§ 03.621 *Control markings.* All cockpit controls, with the exception of the primary flight controls, shall be plainly marked as to their function and method of operation.

§ 03.6210 *Aerodynamic controls.* The secondary controls shall be suitably marked to comply with §§ 03.352 and 03.353.

§ 03.6211 *Power-plant fuel controls.* (a) Controls for fuel tank selector valves shall be marked to indicate the position corresponding to each tank and to all existing cross feed positions.

(b) When more than one fuel tank is provided, and if safe operation depends upon the use of tanks in a specific sequence, the fuel tank selector controls shall be marked adjacent to or on the control to indicate to the flight personnel the order in which the tanks must be used.

(c) On multiengine airplanes, controls for engine valves shall be marked to indicate the position corresponding to each engine.

(d) The capacity of each tank shall be indicated adjacent to or on the fuel tank selector control.

§ 03.6212 *Accessory and auxiliary controls.* (a) When a retractable landing gear is used, the indicator required in § 03.3622 shall be marked in such a manner that the pilot can ascertain at all times when the wheels are secured in the extreme positions.

(b) Emergency controls shall be colored red and clearly marked as to their method of operation.

§ 03.622 *Miscellaneous markings and placards.*

§ 03.6220 *Baggage compartments, ballast location, and special seat loading limitations.* (a) Each baggage or cargo compartment and ballast location shall bear a placard which states the maximum allowable weight of contents and, if applicable, any special limitation of contents due to loading requirements, etc.

(b) When the maximum permissible weight to be carried in a seat is less than 170 pounds (see § 03.113), a placard shall be permanently attached to the seat structure which states the maximum allowable weight of occupants to be carried.

§ 03.6221 *Fuel, oil, and coolant filler openings.* The following information shall be marked on or adjacent to the filler cover in each case:

(a) The word "fuel," the minimum permissible fuel octane number for the engines installed, and the usable fuel tank capacity. (See § 03.4221.)

(b) The word "oil" and the oil tank capacity.

(c) The name of the proper coolant fluid and the capacity of the coolant system.

§ 03.6222 *Emergency exit placards.* Emergency exit placards and operating controls shall be colored red. A placard shall be located adjacent to the control(s) which clearly indicates it to be an emergency exit and describes the method of operation. (See § 03.3812.)

§ 03.6223 *Approved flight maneuvers.*

§ 03.6223–N A placard shall be provided in front of and in clear view of the pilot stating: "No acrobatic maneuvers including spins approved."

§ 03.6223–U A placard shall be provided in front of and in clear view of the pilot stating: "No acrobatic maneuvers approved, except those listed in the Airplane Flight Manual."

§ 03.6223–A A placard shall be provided in clear view of the pilot which lists all approved acrobatic maneuvers and the recommended entry air speed for each. If inverted flight maneuvers are not approved, the placard shall bear a notation to this effect.

§ 03.6224 *Airplane category placard.* A placard shall be provided in front of and in clear view of the pilot stating: "This airplane must be operated as a _____ or _____ category airplane in compliance with the Airplane Flight Manual."

§ 03.63 *Airplane Flight Manual.* An "Airplane Flight Manual" shall be furnished with each airplane. The portions of this document listed below shall be verified and approved by the Administrator, and shall be segregated, identified, and clearly distinguished from portions not so approved. Additional items of information having a direct and important bearing on safe operation may be required by the Administrator when unusual design, operating, or handling characteristics so warrant.

§ 03.630 *Operating limitations*—(a) *Air-speed limitations.* Sufficient information shall be included to permit proper marking of the air-speed limitations on the indicator as required in § 03.6200. It shall also include the design, maneuvering speed, and the maximum safe air speed at which the landing gear can be safely lowered. In addition to the above information, the significance of the air-speed limitations and of the color coding used shall be explained.

(b) *Power-plant limitations.* Sufficient information shall be included to outline and explain all power-plant limitations (see § 03.611) and to permit marking the instruments as required in § 03.6202.

(c) *Weight.* The following information shall be included:

(1) Maximum weight for which the airplane has been certificated,

(2) Airplane empty weight and center of gravity location,

(3) Useful load,

(4) The composition of the useful load, including the total weight of fuel and oil with tanks full.

(d) *Load distribution.* All authorized cg limits shall be stated. If the available space for loading the airplane is adequately placarded or so arranged that any reasonable distribution of the useful load listed in weight above will not result in a cg location outside of the stated limits, this section need not include any other information than the statement of cg limits.

In all other cases this section shall also include adequate information to indicate satisfactory loading combinations which will assure maintaining the cg position within approved limits.

(e) *Maneuvers.* All authorized maneuvers and the appropriate air-speed limitations as well as all unauthorized maneuvers shall be included in accordance with the following:

(1) *Normal category.* All acrobatic maneuvers, including spins, are unauthorized. If the airplane has been demonstrated to be characteristically incapable of spinning in accordance with § 03.1350–NU, a statement to this effect shall be entered here.

(2) *Utility category.* All authorized maneuvers demonstrated in the type flight tests shall be listed, together with recommended entry speeds. All other

maneuvers are not approved. If the airplane has been demonstrated to be characteristically incapable of spinning in accordance with § 03.1350–NU, a statement to this effect shall be entered here.

(3) *Acrobatic category.* All approved flight maneuvers demonstrated in the type flight tests shall be included, together with recommended entry speeds.

(f) *Flight load factor.* The positive limit load factors made good by the airplane's structure shall be described here in terms of accelerations.

(g) *Flight crew.* When a flight crew of more than one is required to operate the airplane safely, the number and functions of the minimum flight crew shall be included.

§ 03.631 *Operating procedures.* This section shall contain information concerning normal and emergency procedures and other pertinent information peculiar to the airplane's operating characteristics which are necessary to safe operation.

§ 03.632 *Performance information.* Information relative to the following items of performance shall be included:

(a) The stalling speed, V_{s0}, at maximum weight,

(b) The stalling speed, V_{s1}, at maximum weight and with landing gear and wing flaps retracted,

(c) The take-off distance determined in accordance with § 03.122, including the air speed at the 50-foot height, and the airplane configuration, if pertinent,

(d) The landing distance determined in accordance with § 03.124, including the airplane configuration, if pertinent,

(e) The steady rate of climb determined in accordance with § 03.123 (a), (c), and, as appropriate, (b), including the air speed, power, and airplane configuration, if pertinent.

The effect of variation in (b) with angle of bank up to 60° shall be included.

The calculated approximate effect of variations in (c), (d), and (e) with altitude and temperature shall be included.

§ 03.7 *Identification data.*

§ 03.70 *Name plate.* A name plate shall be securely attached to and located in the pilot compartment which shall contain:

(a) The manufacturer's name and address.

(b) Model and serial numbers.

(c) Date of manufacture.

(d) Type certificate number.

(e) Production certificate number, (if pertinent).

§ 03.71 *Airworthiness certificate number.* The identifying symbols and registration numbers shall be permanently affixed to the airplane structure in compliance with § 43.102.

(52 Stat. 984, 1007; 49 U. S. C. 425, 551)

Effective: December 15, 1946.

By the Civil Aeronautics Board.

[SEAL] M. C. MULLIGAN,
Secretary.

[F. R. Doc. 46–19847; Filed, Nov. 8, 1946; 8:48 a. m.]

TITLE 13—BUSINESS CREDIT

Chapter I—Reconstruction Finance Corporation

DELEGATION OF AUTHORITY BY OFFICE OF HOUSING EXPEDITER WITH RESPECT TO MERCHANT PIG IRON AND SAND LIME BRICK

CROSS REFERENCE: For directives by the Office of the Housing Expediter delegating authority to the Reconstruction Finance Corporation with respect to Premium Payments Regulation 9 (merchant pig iron) and Premium Payments Regulation (sand lime brick), see F. R. Documents 46–20125 and 46–20124, Title 24, Chapter VIII, Part 802, *infra.*

TITLE 50—WILDLIFE

Chapter I—Fish and Wildlife Service, Department of the Interior

Subchapter B—National Wildlife Refuges: General Regulations

PART 13—ADMINISTRATION OF WILDLIFE REFUGES ESTABLISHED PURSUANT TO THE ACT OF AUGUST 14, 1946

CALHOUN AND SPRING LAKE REFUGES REGULATIONS

Sec.
13.135 Calhoun Refuge.
13.860 Spring Lake Refuge.

AUTHORITY: §§ 13.135 and 13.860 issued under Pub. Law 732, 79th Cong.; Regulations, Fish and Wildlife Service dated December 19, 1940, 5 F. R. 5284; 50 CFR Cum. Supp. Part 12, as amended.

§ 13.135 *Calhoun Refuge.* The hereinafter described lands of the United States, in Calhoun and Jersey Counties, Illinois, having particular value in carrying out the national migratory bird management program, and having been designated as an inviolate sanctuary, it is hereby ordered that hunting and trapping thereon is prohibited at all times.

All of the lands and waters lying and being in secs. 24, 25, and 36, T. 12 S., R. 2 W.; sec. 19, 30, 31 and 32, T. 12 S., R. 1 W.; secs. 3, 4, 5, 6, 8, 9, 10, 15 and 16, T. 13 S., R. 1 W., 4th P. M. which are enclosed in the following definite boundaries: Beginning at a point on the west bank of the Illinois River where it intersects the south boundary of the right-of-way of the Mississippi River Power Company in the NW¼NW¼, Sec. 19, T. 12 S., R. 1 W., 4th P. M; thence west along the north lines of sec. 19, T. 12 S., R. 1 W., and sec. 24, T. 12 S., R. 2 W., to the north quarter corner of section 24; thence following the boundary of the refuge southeasterly and then northeasterly through secs. 24, 25, and 36, T. 12 S., R. 2 W.; sec. 31 T. 12 S., R. 1 W.; secs. 6, 5, 8, 9, 16, 15, 10 and 3, T. 13 S., R. 1 W., to the west bank of the Illinois River in the SE¼SE¼, sec. 3, T. 13 S., R. 1 W.; thence westerly and northerly with the west bank of the Illinois River so as to include Six Mile Island, to the place of beginning; and all of the lands and waters lying and being in secs. 13, 14, 15, and 16, T. 6 N., R. 13 W., 3rd P. M. which are enclosed in the following definite boundaries: Beginning at a point on the easterly bank of the Illinois River where it intersects the east line of the W½NW¼, sec. 13, T. 6 N., R. 13 W.; thence north along said line to a point where it intersects the south boundary of the right-of-way of Illinois State Highway No. 109; thence westerly with the boundary of the refuge through secs. 13, 14, 15 and 16 to a point where said boundary intersects the east bank of the Illinois River in the NW¼NE¼ sec. 16, T. 6 N., R. 13 W.; thence with the east bank of the Illinois River to the place of beginning.

The above described lands, designated as Calhoun Refuge, were acquired by the United States in connection with the improvement of navigation in the Mississippi River Pool No. 26, and their reservation and use as a wildlife refuge is subject to the primary use thereof by the War Department for navigation, flood-control, and other related purposes, and subject to such other uses, not incompatible with the administration of the area as a Federal wildlife refuge, as may be designated by the War Department.

§ 13.860 *Spring Lake Refuge.* The hereinafter described lands of the United States, in Carroll County, Illinois, having particular value in carrying out the national migratory bird management program, and having been designated as an inviolate sanctuary, it is hereby ordered that hunting and trapping thereon is prohibited at all times.

All of the lands and waters lying and being in secs. 22, 23, 25, 26, 27, 35 and 36, T. 24 N., R. 3 E., 4th P. M. which are enclosed in the following definite boundaries: Beginning at a point where the north line of sec. 23 intersects the west boundary of the Chicago, Burlington & Quincy Railroad right-of-way; thence west with the north section lines of secs. 23 and 22 to the west toe of the levee for the Carroll County Drainage and Levee District No. 1; thence southerly and easterly with the west and south toe of said levee to a point in the SE¼SE¼, sec. 27, where the south toe of the levee intersects the south line of sec. 27, thence east along the south line of sec. 27 to the southeast corner of said section; thence south along the west line of sec. 35 to a point where said line intersects the east boundary of the right-of-way of the levee for the Carroll County Drainage and Levee District No. 1; thence southerly and easterly with the east and north boundary of said levee right-of-way to its junction with a public road in the SW¼SE¼, sec. 35; thence northerly and easterly with the west and north boundary of the public road right-of-way through secs. 35 and 36 to a point where said boundary of public road right-of-way intersects the west boundary of the Chicago, Burlington & Quincy Railroad right-of-way; thence northerly and westerly along the west boundary of said right-of-way to the place of beginning, all in T. 24 N., R. 3 E., 4th P. M.

The above described lands, designated as Spring Lake Refuge, were acquired by the United States in connection with the improvement of navigation in the Mississippi River Pool No. 13, and their reservation and use as a wildlife refuge is subject to the primary use thereof by the War Department for navigation, flood-control, and other related purposes, and subject to such other uses, not incompatible with the administration of the area as a Federal wildlife refuge, as may be designated by the War Department.

CLARENCE COTTAM,
Acting Director.

[F. R. Doc. 46–20118; Filed, Nov. 8, 1946; 8:45 a. m.]

TITLE 29—LABOR

Chapter VI—National Wage Stabilization Board

PART 807—WAGE ADJUSTMENT BOARD AREA WAGE RATES

BUILDING AND CONSTRUCTION INDUSTRY IN DISTRICT OF COLUMBIA, GEORGIA, IDAHO, MARYLAND, PENNSYLVANIA, AND TENNESSEE

Pursuant to §§ 806.5 and 807.0 of the regulations of the National Wage Stabilization Board (11 F. R. 8671 and 10999), the National Wage Stabilization Board herewith publishes the area wage rates applicable to jobs in the building and construction industry under the jurisdiction of the Wage Adjustment Board for five additional states and the District of Columbia as follows: the District of Columbia (§ 807.8), Georgia (§ 807.10), Idaho (§ 807.11), Maryland (§ 807.19), Pennsylvania (§ 807.37), Tennessee (§ 807.41).

§ 807.8 *District of Columbia.*

	Building construction
Asbestos workers	$1.93¾
Asbestos workers' improvers:	
1st year	.95
2d year	1.15
3d year	1.35
4th year	1.35
Asphalt and mastic floor layers (cement finishers)	1.75
Blacksmiths	1.25
Boilermakers	1.75
Helpers	1.50
Tank construction	1.75
Tank construction, helpers	1.50
Bricklayers	2.125
Brickmasons	2.125
Burners, acetylene. (Receive rate prescribed for craft performing operation to which burning is incidental.)	
Cabinet makers, carpenters	1.925
Carpenters:	
Journeymen	1.925
Apprentices:	
1st 6 months—45 percent.	
2d 6 months—51 percent.	
3d 6 months—57 percent.	
4th 6 months—62 percent.	
5th 6 months—68 percent.	
6th 6 months—75 percent.	
7th 6 months—81 percent.	
8th 6 months—87 percent.	
Caulkers. (Receive rate prescribed for craft performing operation to which caulking is incidental.)	
Cement finishers	1.75
Concrete workers	1.05
Core drillers	1.10
Core drillers' helpers	1.05
Derrickmen, hand	1.05
Electricians	2.175
Apprentices:	
1st year	.50
2d year	.75
3d year	1.00
4th year	1.25
Elevator constructors	2.04
Elevator constructors' helpers	1.43
Glaziers	1.775
Granite cutters	1.50
Jackhammermen, drillers	1.05
Laborers	1.05
Lathers (wood, wire, and metal)	2.00
Lathers apprentices:	
1st 6 months (per day)	4.00
2d 6 months (per day)	5.20
3d 6 months (per day)	6.50
4th 6 months (per day)	7.50
5th 6 months (per day)	9.50
6th 6 months (per day)	11.00
Lighting fixture hangers, electricians	2.175
Linoleum and soft tile layers, rubber floor layers	$1.925
Apprentices:	
1st 6 months—45 percent.	
2d 6 months—51 percent.	
3d 6 months—57 percent.	
4th 6 months—62 percent.	
5th 6 months—68 percent.	
6th 6 months—75 percent.	
7th 6 months—81 percent.	
8th 6 months—87 percent.	
Marble setters	1.90
Marble setters' helpers	1.25
Maintenance men and mechanics	1.60
Millwrights (see Carpenters).	
Mosaic and terrazzo workers	1.725
Mosaic and terrazzo workers' helpers	1.25
Power equipment operators:	
Air compressors, portable:	
Over 15 cu. ft. per minute	1.75
15 cu. ft. or less per minute—receive rate paid craft performing operation to which the use of the compressor is incidental.	
Blade graders	1.45
Bulldozers	1.45
Cranes or derricks, mounted on wheels or crawler tracks	2.125
Hoists, 2 or more active drums	2.125
Hoists, 1 active drum	1.90
Mixer (concrete) smaller than 10-S, without loader	1.05
Mixer (concrete) 10-S, and larger	1.75
Mortar mixing machine (for bricklayers, stone masons, stone setters)	1.05
Piledriving engineers	2.125
Power saws or woodworking units (sawyer)	1.925
Pump, sump-trench-water supply (hand operated)	1.05
Pump, sump-trench-water supply (mechanically operated)	1.70
Rollers	1.60
Power-driven wheel scoops and carry-alls	1.65
Shovels	2.125
Tractors	1.45
Trenching machines	1.90
Apprentice engineers:	
Firemen	1.25
Oilers	1.15
Ornamental bronze erectors	2.25
Ornamental iron workers	2.25
Apprentices:	
1st 6 months—50 percent.	
2d 6 months—60 percent.	
3d 6 months—66⅔ percent.	
4th 6 months—75 percent.	
Painters	1.775
Apprentices:	
1st 6 months (per week)	20.00
2d 6 months (per week)	25.00
3d 6 months (per week)	30.00
4th 6 months (per week)	35.00
5th 6 months (per week)	40.00
6th 6 months and thereafter (per week)	45.00
Painters:	
Spray	2.00
Structural steel	2.25
Piledrivermen	1.925
Pipelayers (concrete and clay). (Receive rate paid craft performing operation to which pipe laying is incidental.)	
Plasterers	2.125
Plasterers' tenders	1.375
Plumbers	2.00
Plumbers' laborers	1.00
Apprentices:	
1st 6 months—35 percent.	
2d 6 months—35 percent.	
2d year—40 percent.	
3d year—60 percent.	
4th year—75 percent.	
5th year—80 percent.	
Roofers, composition:	
1st hand	$1.70
2d hand or kettlemen	1.40
Helpers	.95
Roofers, slate and tile	2.00
Roofers' helpers (slate, tile and asbestos roofing)	1.00
Rodmen (reinforcing steel placers)	1.85
Rodmen apprentices:	
1st year	.80
2d year	1.00
Sheet metal workers	2.00
Sheet metal workers' apprentices:	
1st 6 months—35 percent.	
2d 6 months—40 percent.	
3d 6 months—45 percent.	
4th 6 months—50 percent.	
5th 6 months—55 percent.	
6th 6 months—60 percent.	
7th 6 months—70 percent.	
8th 6 months—80 percent.	
Sprinkler fitters	1.75
Sprinkler fitters' helpers	1.10
Steam fitters	2.00
Steam fitters' apprentices:	
1st 6 months—35 percent.	
2d 6 months—40 percent.	
3d 6 months—45 percent.	
4th 6 months—50 percent.	
5th 6 months—55 percent.	
6th 6 months—60 percent.	
7th 6 months—65 percent.	
8th 6 months—70 percent.	
9th 6 months—75 percent.	
10th 6 months—80 percent.	
Stone carvers	2.125
Stone cutters (building)	1.875
Stone cutters' apprentices:	
1st 6 months (per week)	25.00
2d 6 months (per week)	25.00
3d 6 months (per week)	29.00
4th 6 months (per week)	33.00
5th 6 months (per week)	37.00
6th 6 months (per week)	41.00
7th 6 months (per week)	45.00
Stone masons	2.125
Stone setters	2.125
Structural iron workers	2.25
Structural iron workers' apprentices:	
1st 6 months—50 per cent.	
2d 6 months—60 per cent.	
3d 6 months—66⅔ per cent.	
4th 6 months—75 per cent.	
Tile setters	1.725
Tile setters' helpers	1.25
Truck drivers:	
Dump trucks up to and including 8 wheels	1.00
Over 8 wheel trucks	1.25
2 tons or less	
Over 2 tons to 6 tons	
Over 6 tons	
Flat trucks, any size	1.15
Hauling type (heavy) flat trucks	
Tractor trailer trucks	1.20
Tractor trailer (heavy hauling type)	
Dumpsters and tractor pull	1.25
Water sprinkle tank trucks	1.10
Grease and oil trucks	1.10
Euclids	1.25
Ross carrier	1.25
Tuck pointers	2.125
Waterproofers. (See composition roofers.)	
Welders. (Receive rate prescribed for craft performing operation to which welding is incidental.)	
Well drillers	1.10
Well drillers' helpers	1.05
Wreckers	1.05

	Heavy construction
Common laborers	$1.05
Miners	1.65
Sheeting men and shoring	1.35
Pipe layers and caulkers	1.50
Wagon drillers and rock drillers	1.50
Bottom men	1.25
Groutmachine tenders	1.35
Form setters	1.35

	Heavy construction
Muckers	$1.10
Jackhammermen (heavy)	1.10
	Highway construction [1]
Skilled labor:	
Asphalt plant engineer (or operator)	$1.25
Carpenters	1.50
Crane operator (paving)	1.50
Drill dresser (or sharpener or tool dresser)	1.25
Head mechanic	1.50
Hoisting engineer (2 or more active drums)	1.25
Master finisher, concrete pavement	1.50
Paver operator, 5-bag rated capacity or over	1.50
Power shovel operator	1.50
Roller operator (finishing high-type pavement surfaces)	1.40
Stone cutter	1.50
Blacksmith	1.25
Motor patrol	1.25
Intermediate grade:	
Asphalt plant mixer	1.15
Air compressor operator (portable, under 400 cu. ft. capacity)	1.15
Asphalt raker	1.175
Blade grader operator	1.175
Asphalt tamper	1.10
Curb setter	1.175
Engineman's assistant	.80
Finishing machine operator (concrete or asphalt)	1.175
Fireman (steam shovel or head fireman on asphalt plant)	.80
Float man	1.175
Form setter	1.25
Jackhammer operator	1.05
Oiler (power shovel, cranes, draglines)	.95
Paver (block)	1.175
Roller operator (other than finishing high-type pavement surfaces)	1.00
Spreader operator	1.10
Tractor operator (20 or more h. p. mfg. rated capacity)	1.175
Truck driver (over 2 ton mfg. rated capacity)	.85
Vibrator operator	.95
Unskilled labor:	
Asphalt loader and shoveler	.95
Asphalt plant, misc. labor	.95
Finisher's helper, concrete pavement	.95
Reinforcing stool laborer	.95
Spader, concrete work	.95
Shoveler concrete	.95
Tractor operator (under 20 h. p. mfg. rated capacity)	.95
Truck driver (2 ton mfg. rated capacity or less)	.85
Blacksmith's helper	.95
Laborer, misc. unskilled	.95

[1] Not applicable to paving in connection with building construction projects, such as roads within the building line or parking areas; tennis courts or other recreational areas; airport runway construction, and excavation, etc.

§ 807.10 *Area wage rates for Georgia.*

	Building construction
Appling County. (Same as Glynn County.)	
Atkinson County.	
Bacon County. (Same as Chatham County.)	
Baker County.	
Baldwin County. (Same as Macon County, except for the following rates):	
Bricklayers	$1.45
Cement finishers	1.45
Marble setters	1.45
Plasterers	1.45
Sheet metal workers	1.125
Terrazzo workers	1.45
Tile setters	1.45
Banks County.	
Barrow County. (Same as Fulton County.)	
Barton County (Same as Fulton County.)	
Ben Hill County.	
Berrien County.	
	Building construction
Bibb County:	
Sheet metal workers	$1.125
(Other classifications same as Macon County.)	
Bleckley County:	
Bricklayers	1.45
Cement finishers	1.45
Marble setters	1.45
Plasterers	1.45
Sheet metal workers	1.125
Terrazzo workers	1.45
Tile setters	1.45
(Other classifications same as Macon County.)	
Brantley County.	
Brooks County.	
Bryan County.	
Bullock County. (Same as Chatham County.)	
Burke County. (Same as Richmond County.)	
Butts County.	
Calhoun County.	
Camden County:	
Carpenters, journeymen	1.375
Cement finishers	1.25
Electricians	1.50
Laborers, building	.75
Mason tenders	.85
Mortar mixers	.85
Painters, brush	1.25
Painters, spray	1.50
Painters, structural steel	1.50
Piledrivermen	1.375
Pipe layers (concrete and clay)	.85
Plasterers' tenders	.85
Plumbers	1.625
Truck drivers:	
1½ ton (under)	.75
1½ ton and over	.85
trailer truck	1.00
helper	.75
(Other classifications same as Chatham County.)	
Candler County.	
Carroll County. (Same as Fulton County.)	
Catoosa County. (Same as Hamilton County, Tenn.)	
Charlton County.	
Chatham County:	
Air tool op. (jackhammermen, vibrator)	.70
Asbestos workers	1.625
Asbestos workers' imp.:	
1st year	.80
2d year	1.00
3d year	1.20
4th year	1.40
Blacksmiths	1.00
Blacksmiths' helpers	.75
Boilermakers	1.625
Boilermakers' helpers	1.375
Bricklayers	1.625
Carpenters, journeymen	1.375
Cement finishers	1.25
Electricians	1.65
Firemen and oilers	.90
Glaziers	1.375
Iron workers:	
Structural	1.625
Ornamental	1.625
Reinforcing	1.375
Laborers:	
Building	.60
Concrete	.60
Unskilled	.60
Lathers	1.00
Machinists	1.00
Machinists' helpers	.80
Marble setters	1.625
Marble setters' helpers	.60
Mason tenders	.70
Mortar mixers	.70
Painters, brush	1.375
Painters, spray	1.625

Chatham County—Continued.	*Building construction*
Painters, structural steel	$1.50
Piledrivermen	1.375
Pipe layers (concrete and clay)	.75
Plasterers	1.50
Plasterers' tenders	.70
Plumbers	1.625
Plumbers' helpers	.75
Power equipment operators:	
Air compressors	1.25
Blade graders	1.00
Bulldozers	1.25
Cranes, derricks, draglines	1.50
Distributors (bituminous surfaces)	1.00
Finishing mach. (cem. conc. pave.)	1.00
Hoists, 1 drum and 2 drums	1.25
Hoists, 3 or more drums	1.50
Mixers (10–S, or smaller)	1.00
Mixers (larger than 10–S)	1.25
Motor graders	1.00
Piledrivers	1.50
Pumps	1.00
Rollers	1.25
Scrapers	1.25
Shovels	1.50
Tractors	1.00
Trenching machines	1.25
Roofers	1.00
Roofers' helpers	.65
Sheet metal workers	1.375
Soft floor layers (linoleum)	1.375
Steam fitters	1.625
Stone masons or cutters	1.625
Teamsters	.60
Terrazzo workers	1.625
Terrazzo workers' helpers	.60
Tile setters	1.625
Tile setters' helpers	.60
Truck drivers	.60
Truck drivers, trailers	.70
Welders	P. R.
Well drivers	1.00
Well drivers' helpers	.75
Chattahoochee County:	
Air tool operators (jackhammermen, vibrator)	.85
Asbestos workers	1.625
Asbestos workers, imp.:	
1st year	.80
2d year	1.00
3d year	1.20
4th year	1.40
Blacksmiths	1.00
Blacksmiths' helpers	.70
Boilermakers	1.625
Boilermakers' helpers	1.375
Bricklayers	1.75
Carpenters, journeymen	1.35
Cement finishers	1.50
Electricians	1.50
Firemen and oilers	.75
Glaziers	1.00
Iron workers:	
Structural	1.625
Ornamental	1.625
Reinforcing	1.375
Laborers:	
Building	.70
Concrete	.70
Unskilled	.70
Lathers	1.625
Marble setters	1.25
Mason tenders	.80
Mortar mixers	.80
Painters:	
Brush	1.35
Spray	1.50
Structural steel	1.35
Piledrivermen	1.35
Plasterers	1.50
Plasterers' tenders	.80
Plumbers	1.75
Plumbers' helpers	.75
Power equipment operators:	
Air compressors	1.00
Blade graders	.75
Bulldozers	.75
Cranes, derricks, draglines	1.25

Chattahoochee County—Con.	*Building construction*
Power equipment operators—Con.	
Distributors (bituminous surfaces)	$0.75
Finishing mach. (cem. conc. pave.)	.75
Hoists, 1 drum	1.00
Hoists, 2 or more drums	1.25
Mixers (10–S, or smaller)	.75
Mixers (larger than 10–S)	1.00
Motor graders	.75
Piledrivers	1.25
Pumps	.75
Rollers	.75
Scrapers	1.00
Shovels	1.25
Tractors	.75
Trenching machines	1.15
Roofers, composition	1.00
Roofers, slate and tile	1.00
Sheet metal workers	1.40
Soft-floor layers (linoleum)	1.35
Steam fitters	1.75
Steam fitters' helpers	.75
Stone masons or cutters	1.75
Terrazzo workers	1.25
Tile setters	1.25
Truck drivers	.70
Welders	P.R.
Chattooga County.	
Cherokee County.	
Clarke County:	
Air tool op. (jackhammermen, vibrator)	.80
Asbestos workers	1.625
Asbestos workers', imp.:	
1st year	.80
2d year	1.00
3d year	1.20
4th year	1.40
Blacksmiths	1.00
Boilermakers	1.625
Boilermakers' helpers	1.375
Bricklayers	1.50
Carpenters, journeymen	1.25
Carpenters, tenders	.70
Cement finishers	1.25
Electricians	1.50
Firemen	1.00
Oilers	.90
Glaziers	1.25
Iron workers:	
Structural	1.625
Ornamental	1.625
Reinforcing	1.375
Laborers:	
Building	.65
Concrete	.65
Unskilled	.65
Lathers, metal	1.50
Lathers, wood	1.125
Marble setters	1.50
Marble setters' helpers	.70
Mason tenders	.75
Mortar mixers	.75
Painters, brush and sign	1.25
Painters, spray	1.50
Painters, structural steel	1.25
Piledrivermen	1.25
Plasterers	1.25
Plasterers' tenders	.75
Plumbers	1.625
Power equipment operators:	
Air compressors	1.25
Blade graders	1.25
Bulldozers	1.25
Cranes, derricks, draglines	1.60
Distributors (bituminous surfaces)	1.25
Finishing mach. (cem. conc. pave.)	1.25
Hoists, 1 drum	1.25
Hoists, 2 or more drums	1.60
Mixers (10–S or smaller)	.90
Mixers (larger than 10–S)	1.25
Motor graders	1.25
Piledrivers	1.60
Pumps	.90
Rollers	1.25

Clarke County—Continued.	*Building construction*
Power equipment operators—Con.	
Scrapers	$1.25
Shovels	1.60
Tractors	1.25
Trenching machines	1.25
Roofers, composition	1.125
Roofers, slate and tile	1.125
Roofers' helpers	.675
Sheet metal workers	1.25
Soft-floor layers (linoleum)	1.25
Steam fitters	1.625
Stone masons or cutters	1.50
Terrazzo workers	1.50
Terrazzo workers' helpers	.70
Tile setters	1.50
Tile setters' helpers	.70
Truck drivers	.65
Clay County.	
Clayton County. (Same as Fulton County.)	
Clinch County. (Same as Chatham County.)	
Cobb County. (Same as Fulton County.)	
Coffee County. (Same as Chatham County.)	
Colquitt County.	
Columbia County.	
Cook County.	
Coweta County.	
Crawford County.	
Crisp County.	
Dade County.	
Dawson County.	
Decatur County.	
Dekalb County. (Same as Fulton County.)	
Dodge County:	
Bricklayers	1.45
Cement finishers	1.45
Marble setters	1.45
Plasterers	1.45
Sheet metal workers	1.125
Terrazzo workers	1.45
Tile setters	1.45
(Other classifications same as Macon County)	
Dooly County.	
Dougherty County.	
Douglas County.	
Early County.	
Echols County.	
Effingham County.	
Elbert County. (Same as Clarke County.)	
Emanuel County. (Same as Chatham County.)	
Evans County.	
Fannin County. (Same as Hamilton County, Tenn.)	
Fayette County.	
Floyd County. (Same as Fulton County.)	
Forsyth County.	
Franklin County. (Same as Clarke County.)	
Fulton County:	
Air tool op. (jackhammermen, vibrator)	.85
Asbestos workers	1.625
Asbestos workers, imp.:	
1st year	.80
2d year	1.00
3d year	1.20
4th year	1.40
Blacksmiths	1.00
Blacksmiths' helpers	.75
Boilermakers	1.625
Boilermakers' helpers	1.375
Bricklayers	1.9375
Carpenters, journeymen	1.50
Cement finishers	1.625
Electricians	1.65
Firemen	1.00
Glaziers	1.375
Iron workers:	
Structural	1.625
Ornamental	1.625
Reinforcing	1.375

Fulton County—Continued.	*Building construction*
Laborers, building	$0.75
Laborers, concrete	.75
Lathers, metal	1.625
Lathers, wood	1.375
Marble setters	1.675
Marble setters' apprentice:	
1st year—50 percent of journeymen's rate.	
2d year—70 percent of journeymen's rate.	
3d year—80 percent of journeymen's rate.	
Mason tenders	.85
Mortar mixers	.85
Painters, brush	1.375
Painters, spray	2.00
Painters, structural steel	1.50
Piledrivermen	1.40
Pipe layers (concrete and clay)	.85
Plasterers	1.625
Plasterers' tenders	.85
Plumbers	1.75
Power equipment operators:	
Air compressors	1.35
Blade graders	1.25
Bulldozers	1.35
Cranes, derricks, draglines	1.60
Distributors (bituminous surfaces)	1.25
Finishing mach. (cem. conc. pave.)	1.25
Hoists, 1 drum	1.35
Hoists, 2 or more drums	1.60
Mixers (10–S, or smaller)	.90
Mixers (larger than 10–S)	1.25
Motor graders	1.25
Piledrivers	1.60
Pumps	.90
Rollers	1.35
Scrapers	1.35
Shovels	1.60
Tractors	1.35
Trenching machines	1.25
Roofers, composition	1.125
Roofers, slate and tile	1.125
Roofers' helpers	.675
Sheet metal workers	1.40
Soft floor layers (linoleum)	1.40
Steam fitters	1.75
Stone masons	1.75
Terrazzo workers	1.675
Tile setters	1.675
Tile setters' helpers	.70
Truck drivers:	
Under 1½ tons	.75
1½–7½ tons	1.00
Transit mix	1.25
Mechanics	1.25
Welders	P.R.
Well drillers	1.00
Well drillers' helpers	.75
Gilmer County.	
Glascock County.	
Glynn County:	
Carpenters, journeymen	1.375
Cement finishers	1.25
Electricians	1.50
Laborers, building	.75
Mason tenders	.85
Mortar mixers	.85
Painters:	
Brush	1.25
Spray	1.50
Structural steel	1.50
Piledrivermen	1.375
Pipe layers (concrete and clay)	.85
Plasterers' tenders	.85
Plumbers	1.625
Truck drivers:	
1½ ton under	.75
1½ ton or over	.85
Trailer truck	1.00
Helper	.75
(Other classifications same as Chatham County.)	
Gordon County.	
Grady County.	
Greene County.	
Gwinnett County. (Same as Fulton County.)	

Habersham County. (Same as Clarke County.)
Hall County. (Same as Clarke County.)
Hancock County.
Haralson County.
Harris County.
Hart County. (Same as Clarke County.)
Heard County.
Henry County.
Houston County:

	Building construction
Sheet metal workers	$1.125
(Other classifications same as Macon County.)	

Irwin County.
Jackson County. (Same as Clarke County.)
Jasper County.
Jeff Davis County.
Jefferson County.
Jenkins County. (Same as Richmond County.)
Johnson County.
Jones County.
Lamar County:

Sheet metal workers	1.125
(Other classifications same as Macon County.)	

Lanier County.
Laurens County:

Bricklayers	1.45
Cement finishers	1.45
Marble setters	1.45
Plasterers	1.45
Sheet metal workers	1.125
Terrazzo workers	1.45
Tile setters	1.45
(Other classifications same as Macon County.)	

Lee County.
Liberty County. (Same as Chatham County.)
Lincoln County. (Same as Richmond County.)
Long County.
Lowndes County.
Lumpkin County. (Same as Clarke County.)
McDuffie County.
McIntosh County. (Same as Chatham County.)
Macon County:

Air tool operators (jackhammermen, vibrator)	.70
Asbestos workers	1.625
Asbestos workers', imp.:	
1st year	.80
2d year	1.00
3d year	1.20
4th year	1.40
Blacksmiths	1.00
Blacksmiths' helpers	.70
Boilermakers	1.625
Boilermakers' helpers	1.375
Bricklayers	1.625
Carpenters, journeymen	1.30
Cement finishers	1.50
Firemen and oilers	.70
Glaziers	1.00
Iron workers:	
Structural	1.625
Ornamental	1.625
Reinforcing	1.375
Laborers:	
Building	.65
Concrete	.65
Unskilled	.65
Lathers	1.25
Machinists	1.00
Marble setters	1.625
Marble setters' helpers	.65
Mason tenders	.70
Mortar mixers	.70
Painters:	
Brush	1.20
Spray	1.30
Structural steel	1.30
Piledrivermen	1.30
Pipe layers (concrete and clay)	.70
Plasterers	1.625
Plasterers' tenders	.70
Plumbers	1.625

Macon County—Continued.

	Building construction
Power equipment operators:	
Air compressors	$1.00
Blade graders	1.00
Bulldozers	1.00
Cranes, derricks, draglines	1.25
Distributors (bituminous surfaces)	1.00
Finishing mach. (cem. conc. pave.)	1.00
Hoists, 1 drum	1.00
Hoists, 2 or more drums	1.25
Mixers (10-S, or smaller)	.70
Mixers (larger than 10-S)	1.00
Motor graders	1.00
Piledrivers	1.25
Pumps	1.00
Rollers	1.00
Scrapers	1.00
Shovels	1.25
Tractors	1.00
Trenching machines	1.00
Roofers, composition	1.00
Roofers, slate and tile	1.00
Sheet metal workers	1.40
Soft-floor layers (linoleum)	1.30
Steam fitters	1.625
Stone masons	1.625
Terrazzo workers	1.44
Terrazzo workers' helpers	.65
Tile setters	1.44
Tile setters' helpers	.65
Truck drivers	.65
Welders	P.R.
Well drillers	1.00
Well drillers' helpers	.65

Madison County. (Same as Clarke County)
Marion County.
Meriwether County:

Sheet metal workers	1.125
(Other classifications same as Macon County.)	

Miller County.
Mitchell County.
Monroe County.
Montgomery County.
Morgan County.
Murray County.
Muscogee County. (Same as Chattahoochee County.)
Newton County. (Same as Fulton County.)
Oconee County.
Oglethorpe County.
Paulding County. (Same as Fulton County.)
Peach County:

Sheet metal workers	1.125
(Other classifications same as Macon County.)	

Pickens County. (Same as Fulton County.)
Pierce County.
Pike County.

Sheet metal workers	1.125
(Other classifications same as Macon County.)	

Polk County. (Same as Fulton County.)
Pulaski County.
Putnam County:

Bricklayers	1.45
Cement finishers	1.45
Marble setters	1.45
Plasterers	1.45
Sheet metal workers	1.125
Terrazzo workers	1.45
Tile setters	1.45
(Other classifications same as Macon County.)	

Quitman County.
Rabun County.
Randolph County.
Richmond County:

Air tool operators (jackhammermen, vibrator)	.60
Blacksmiths	.80
Boilermakers	1.625
Boilermakers' helpers	1.375
Bricklayers	1.675

Richmond County—Continued.

	Building construction
Carpenters, journeymen	$1.375
Cement finishers	1.625
Electricians	1.65
Firemen and oilers	.90
Glaziers	1.00
Iron workers, structural	1.625
Iron workers, ornamental	1.625
Iron workers, reinforcing	1.375
Laborers, unskilled	.60
Lathers	1.25
Machinists	1.00
Marble setters	1.44
Marble setters' helpers	.60
Mason tenders	.60
Mortar mixers	.60
Painters, brush	1.25
Painters, spray	1.50
Piledrivermen	1.25
Plasterers	1.675
Plasterers' tenders	.60
Plumbers	1.625
Plumbers' helpers	.60
Power equipment operators:	
Air compressors	1.25
Blade graders	1.00
Bulldozers	1.25
Cranes, derricks, draglines	1.50
Distributors (bituminous surfaces)	1.00
Finishing mach. (cem. conc. pave.)	1.00
Hoists, 1 drum and 2 drums	1.25
Hoists, 3 or more drums	1.50
Mixers (10–S, or smaller (concrete)	1.00
Mixer (larger than 10–S) (concrete)	1.25
Motor graders	1.00
Piledrivers	1.50
Pumps	1.00
Rollers	1.25
Scrapers	1.25
Shovels	1.50
Tractors	1.00
Trenching machines	1.00
Roofers, composition	1.00
Roofers, slate and tile	1.00
Roofers' helpers	.60
Soft floor layers (linoleum)	1.25
Steam fitters	1.625
Steam fitters' helpers	.55
Stone masons or cutters	1.675
Teamsters	.55
Terrazzo workers	1.44
Terrazzo workers' helpers	.60
Tile setters	1.625
Tile setters' helpers	.60
Truck drivers	.60
Well drillers	.875
Well drillers' helpers	.60

Rockdale County.
Schley County.
Screven County. (Same as Chatham County.)
Seminole County.
Spalding County. (Same as Fulton County.)
Stephens County. (Same as Clarke County.)
Stewart County.
Sumter County.
Talbot County.
Taliaferro County. (Same as Richmond County.)
Tattnall County. (Same as Chatham County.)
Taylor County.
Telfair County.
Terrell County.
Thomas County.
Tift County.
Toombs County. (Same as Chatham County.)
Towns County.
Treutlen County:

Bricklayers	1.45
Cement finishers	1.45
Marble setters	1.45
Plasterers	1.45
Sheet metal workers	1.125

Treutlen County—Continued.	*Building construction*
Terrazzo workers	$1.45
Tile setters	1.45
(Other classifications same as Macon County.)	
Troup County:	
Sheet metal workers	1.25
(Other classifications same as Chattahoochee County.)	
Turner County.	
Twiggs County.	
Union County. (Same as Clarke County.)	
Upson County:	
Sheet metal workers	1.125
(Other classifications same as Macon County.)	
Walker County. (Same as Hamilton County, Tenn.)	
Walton County.	
Ware County. (Same as Glynn County.)	
Warren County. (Same as Richmond County.)	
Washington County.	
Wayne County. (Same as Chatham County.)	
Webster County.	
Wheeler County.	
White County.	
Whitfield County. (See Hamilton County, Tenn.)	
Wilcox County.	
Wilkes County.	
Wilkinson County.	
Worth County.	

§ 807.11 *Area wage rates for the State of Idaho.*

Ada County:	*Building construction*
Air tool operators (jackhammermen, vibrator)	$1.25
Asbestos workers	1.67
Asphalt workers	1.125
Blacksmiths	1.375
Blacksmiths' helpers	.875
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	1.75
Carpenters, journeymen	1.50
Dumpmen	1.125
Cement finishers	1.50
Electricians	1.625
Glaziers	1.125
Iron workers:	
Structural	1.725
Ornamental	1.725
Reinforcing	1.435
Laborers:	
Concrete wet or dry	1.125
General	1.00
Lathers	1.70
Mechanics (auto)	1.25
Machinists	1.45
Machinist's helpers	1.00
Marble setters	1.50
Marble setters' helpers	1.00
Mason tenders	1.25
Mortar mixers	1.00
Painters:	
Brush	1.50
Spray	1.825
Piledrivermen	1.50
Plasterers	1.70
Plasterers' tenders	1.25
Plumbers	1.625
Plumbers' helpers	1.00
Powdermen	1.375
Powdermen helpers	.875
Chuck tenders, muckers	1.125
Wagon drill	1.25
Tunnel men and drillers	1.25
Operating engineers. (Same as Statewide rates.)	
Roofers:	
Composition	1.30
Slate and tile	1.25
Helpers	1.00
Sheet metal workers	1.40
Soft floor layers (lineoleum)	1.375

Ada County—Continued.	*Building construction*
Steam fitters	$1.625
Steam fitters' helpers	1.00
Stone masons	1.75
Teamsters	.80
Terrazzo workers	1.50
Terrazzo workers' helpers	1.00
Tile setters	1.75
Tile setters' helpers	1.00

	Building, heavy, and highway construction
Truck drivers:	
Transit mix	$1.25
Dump:	
Less than 2 yds	1.00
2 yds. less than 4 yds	1.125
4 yds. less than 8 yds	1.25
Flat racks:	
Under 3 tons	1.00
3 tons and over	1.25
Water trucks	1.125
Truck service men	1.125
Teamsters' helper	1.00
Truck mechanics	1.60
Dump:	
8 yards and less than 12	1.557
12 yards and less than 20	1.65
20 yards and over	1.90

Adams County. (Same as Ada County.)

Bannock County:	*Building construction*
Air tool op. (jackhammerman, vibrator)	$1.35
Asbestos workers	1.375
Asphalt rakers, tampers and smoothers	1.25
Blacksmiths	1.50
Blacksmiths' helpers	1.00
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	1.875
Cable splicers	1.75
Carpenters, journeymen	1.575
Cement finishers	1.75
Electricians	1.625
Glaziers	1.25
Iron workers:	
Structural	1.75
Ornamental	1.75
Reinforcing	1.625
Laborers, unskilled	1.10
Lathers (metal)	1.50
Lathers (wood)	1.25
Machinists	1.50
Machinists' helpers	.875
Marble setters	1.70
Marble setters' helpers	1.00
Mason tenders	1.375
Mortar mixers	1.375
Painters:	
Decorators, paper hangers	1.50
Spray	1.875
Sign	1.625
Swing stage	1.50
Piledrivermen	1.45
Pipe fitters	1.50
Pipe layers (concrete and clay)	1.375
Pipe fitters' helpers	1.00
Plasterers	1.875
Plasterers' tenders	1.375
Plumbers	1.625
Plumbers' helpers	1.00
Powdermen	1.375
Cement handlers	1.35
Firemen (salamanders)	1.10
Power equipment operators. (Same as Statewide rates.)	
Roofers:	
Composition	1.30
Slate and tile	1.30
Helpers	.90
Sheet metal workers	1.625
Soft floor layers (linoleum)	1.20
Steamfitters	1.625
Steamfitters' helpers	1.00
Stone masons	1.875
Teamsters (2-horse and 4-horse)	1.125
Terrazzo workers	1.70
Terrazzo workers' helpers	1.00
Tile setters	1.70

Bannock County—Continued.	*Building, heavy, and highway construction*
Truck drivers:	
Flat rack under 3 tons	$1.125
Flat rack 3 tons and less than 10	1.25
Dump, less than 4 yds	1.125
Dump, 4 yds., less than 6	1.25
Dump, 6 yds., less than 8	1.25
Flat rack, 10 tons, and less than 15	1.375
Flat rack, 15 tons and less than 20	1.375
Flat rack, over 20 tons	1.45
Dump, 8 yds. and less than 12 yds	1.45
Dump, 12 yds. and over	1.55

Bear Lake County. (Same as Bannock County.)
Benewah County. (No rates.)
Bingham County. (Same as Bannock County.)
Blaine County. (No rates.)
Boise County. (Same as Ada County.)
Bonner County. (No rates.)
Bonneville County. (Same as Bannock County.)
Boundary County. (No rates.)
Butte County. (No rates.)
Camas County. (No rates.)
Canyon County. (Same as Ada County.)
Caribou County. (Same as Bannock County.)
Cassia County. (Same as Bannock County.)
Clark County. (Same as Bannock County.)
Clearwater County. (No rates.)
Custer County. (No rates.)
Elmore County. (Same as Ada County.)
Franklin County. (Same as Bannock County.)
Fremont County. (Same as Bannock County.)
Gem County. (Same as Ada County.)

Gooding County:	
Electricians	1.50
Plumbers and steam fitters	1.50
(All other classifications same as Ada County.)	

Idaho County. (No rates.)
Jefferson County. (Same as Bannock County.)

Jerome County:	*Building construction*
Electricians	$1.50
Plumbers and steam fitters	1.50
(All other classifications same as Ada County.)	

Kootenai County:	
Air tool operator (jackhammermen, vibrator)	1.35
Asbestos workers	1.67
Auto mechanics	1.375
Blacksmiths	1.50
Blacksmiths' helpers	1.15
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	2.00
Bridge, dock builders	1.625
Casters	1.875
Carpenters, journeymen	1.625
Cement finishers	1.80
Electricians	1.75
Elevator constructors	1.81
Elevator constructors' helpers	1.27
Glaziers	1.35
Iron workers:	
Structural	1.80
Ornamental	1.80
Reinforcing	1.60
Laborers:	
Building	1.15
Handling concrete blocks	1.35
Unskilled	1.15
Lathers	1.80
Marble setters	1.85
Mason tenders	1.35
Mortar mixers	1.35

Kootenai County—Continued.	*Building construction*
Painters:	
Brush	$1.575
Spray	1.925
Sign	1.775
Piledrivermen	1.625
Pipe layers (concrete and clay)	1.35
Plasterers	1.875
Plasterers' tenders	1.35
Plumbers	1.75
Pipe fitters	1.75
Powdermen	1.50
Power equipment operators. (Same as Spokane County, Wash.)	
Roofers	1.375
Sheet metal workers	1.70
Steam fitters	1.75
Stone masons	2.00
Boilermakers (tank construction)	1.75
Boilermakers (tank construction)	1.50
Terrazzo workers	1.725
Tile setters	1.725
Truck drivers. (Same as Spokane County, Wash.)	
Latah County:	
Air tool operators (jackhammermen, vibrator)	1.35
Asbestos workers	1.67
Blacksmiths	1.50
Blacksmiths' helpers	1.15
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	1.75
Carpenters, journeymen	1.625
Cement finishers	1.50
Electricians	1.75
Electricians' helpers	1.00
Glaziers	1.40
Ironworkers:	
Structural	1.80
Ornamental	1.80
Reinforcing	1.60
Laborers, building	1.15
Laborers, unskilled	1.15
Lathers	1.625
Marble setters	1.50
Marble tenders	1.35
Mortar mixers	1.35
Painters:	
Brush	1.40
Spray	1.65
Sign	1.65
Piledrivermen	1.625
Plasterers	1.50
Plumbers	1.75
Power equipment operators. (Same as Spokane Co., Wash.)	
Roofers, composition	1.40
Roofers, slate and tile	1.40
Sheet metal workers	1.70
Steam fitters	1.75
Stone masons	1.75
Terrazzo workers	1.50
Terrazzo workers' helpers	1.10
Tile setters	1.50
Tile setters' helpers	1.10
Truck drivers. (Same as Spokane County, Wash.)	
Lemhi County. (Same as Bannock County.)	
Lewis County. (No rates.)	
Lincoln County. (No rates.)	
Madison County. (Same as Bannock County.)	
Minidoka County. (Same as Bannock County.)	
Nez Perce County. (Same as Latah County.)	
Oneida County. (Same as Bannock County.)	
Owyhee County. (No rates.)	
Payette County. (Same as Ada County.)	
Power County. (Same as Bannock County.)	
Shoshone County. (No rates.)	
Teton County. (Same as Bannock County.)	

Twin Falls County:	*Building construction*
Electricians	$1.50
Plumbers and steam fitters	1.50
All other classifications same as Ada County.	
Valley County. (Same as Ada County.)	
Washington County. (Same as Ada County.)	

	Building, heavy and highway construction
Statewide rates. (Applicable to that portion of Idaho County lying south of a line extended from the State Boundary line of Oregon and Washington, *east* to the eastern boundary line of Idaho County, and the following counties in Idaho: Adams, Lemhi, Washington, Valley, Custer, Clark, Fremont, Boise, Payette, Ada, Elmore, Blaine, Butte, Jefferson, Madison, Teton, Bonneville, Bingham, Owyhee, Lincoln, Twin Falls, Cassia, Minidoka, Power, Caribou, Franklin, Bannock, Bear Lake, Camas, Canyon, Jerome, Oneida, Gooding and Gem.)	
Operating engineers:	
Air compressor, up to 500 c. f. m.	$1.25
Air compressor, over 500 c. f. m.	1.50
Asphalt spreader operator	1.50
Box operator	1.50
Concrete mixing and batching plant	1.60
Concrete paver	1.60
Cranes, derricks	1.75
Crushers	1.50
Finishing machine (cem. conc. pave.)	1.50
Hot plant operator	1.50
Hoists	1.50
Laying machine operators	1.45
Mixers, up to 1 yd	1.30
Motor graders	1.60
Pumpcrete operators	1.50
Power loader operators	1.50
Pumps	1.25
Piledrivers	1.75
Rollers, tandem	1.60
Rollers, ballus	1.30
Shovels and draglines:	
Up to 1 yd	1.60
1 to 4 yds	1.90
4 yds. and over	2.00
Screening plant operators	1.375
Shaker operators	1.25
Tandem carry-all	1.75
Tractors, without attachments	1.50
Tractors with attachments	1.60
Turnapulls	1.75
Trenching machines, 16-inch width and over	1.60
Wood road mix operator	1.50
Welders	1.60
Elevating graders	1.65
Fireman	1.30
Fireman, retort	1.30
Dredge firemen on float derrick	1.30
Oilers	1.15
Mechanics	1.60
Mechanics' helpers	1.15
Weighing scale operators	1.35

§ 807.19 *Area wage rates for Maryland.*

Allegany County:	*Building construction*
Air tool operators (jackhammermen, vibrator)	$0.95
Asbestos workers	1.85
Asbestos workers imp.:	
1st year	.825
2d year	1.25
3d year	1.25
4th year	1.35

Allegany County—Continued.	*Building construction*
Blacksmiths	$1.25
Blacksmiths' helpers	.90
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	1.725
Carpenters, journeymen	1.50
Cement finishers	1.4375
Electricians	1.625
Firemen and oilers	1.00
Glaziers	1.25
Iron workers:	
Structural	1.75
Ornamental	1.75
Reinforcing	1.50
Laborers, building	.85
Laborers, unskilled	.85
Lathers	1.50
Marble setters	1.25
Mason tenders	.95
Mortar mixers	.95
Painters:	
Brush and sign	1.25
Spray	1.50
Structural steel	1.50
Piledrivermen	1.50
Plasterers	1.6875
Plasterers' tenders	.95
Plumbers	1.625
Plumbers' helpers	1.00
Power equipment operators:	
Air compressors	1.375
Blade graders	1.00
Bulldozers	.875
Cranes, derricks, draglines	1.625
Distributors (bituminous surfaces)	1.375
Finishing mach. (cem. conc. pave.)	1.375
Hoists, 1 drum	1.375
Hoists, 2 or more drums	1.625
Mixers	1.375
Motor graders	1.375
Piledrivers	1.625
Pumps	1.375
Rollers	1.375
Scrapers	1.375
Shovels	1.625
Tractors without mech. att	.875
Tractors with mech. att	1.00
Trenching machines	1.625
Roofers:	
Composition	1.00
Slate and tile	1.00
Helpers	.875
Sheet metal workers	1.375
Soft floor layers (linoleum)	1.50
Steam fitters	1.625
Stone masons	1.725
Terrazzo workers	1.25
Tile setters	1.25
Truck drivers:	
Dump under 5 yds	1.10
Mixer	1.10
Straight or dump:	
Under 5 yds	.90
5–9 yds	1.20
10–15 yds	1.35
Anne Arundel County. (Same as Baltimore County.)	
Baltimore County:	
Air tool operators (jackhammermen, vibrator)	1.05
Asbestos workers	1.85
Asbestos workers' app., imp., helpers:	
1st year	.825
2d year	1.25
3d year	1.25
4th year	1.35
Blacksmiths	1.25
Blacksmiths' helpers	.95
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	1.90
Carpenters, journeymen	1.775
Cement finishers	1.725
Electricians	1.85

Baltimore County—Continued.	Building construction
Electricians' helpers	$0.825
Firemen	1.375
Oilers	1.10
Glaziers	1.60
Iron workers:	
Structural	1.90
Ornamental	1.90
Reinforcing	1.60
Laborers, building	.95
Laborers, concrete	.95
Laborers, unskilled	.95
Lathers	1.875
Machinists	1.625
Machinists' helpers	1.10
Marble setters	1.375
Marble setters' helpers	1.25
Mason tenders	1.05
Mortar mixers	1.05
Painters:	
Brush and sign	1.50
Spray	1.55
Structural steel	1.625
Piledrivermen	1.775
Pipe layers (concrete and clay)	1.05
Plasterers	1.90
Plasterers' tenders	1.25
Plumbers	1.85
Power equipment operators:	
Air compressors	1.625
Blade graders	1.425
Bulldozers	1.425
Cranes, derricks, draglines	1.95
Finishing mach. (cem. conc. pave.)	1.425
Hoists, 1 drum	1.625
Hoists, 2 or more drums	1.95
Mixers	1.625
Motor graders	1.55
Piledrivers	1.95
Pumps	1.625
Rollers	1.625
Scrapers	1.625
Shovels	1.95
Tractors	1.425
Trenching machines	1.95
Roofers, composition	1.50
Roofers, slate and tile	1.705
Sheet metal workers	1.85
Soft floor layers (linoleum)	1.55
Steam fitters	1.85
Steam fitters' helpers	.9625
Stone masons or cutters	1.90
Teamsters	.75
Terrazzo workers	1.75
Tile setters	1.75
Tile setters' helpers	1.25
Truck drivers	1.00
Well drillers	1.25
Well drillers' helpers	.95
Baltimore City. (Same as Baltimore County.)	
Calvert County. (Same as District of Columbia.)	
Caroline County:	
Bricklayers	1.875
Plasterers	1.875
Stone masons	1.875
Soft floor layers	No rate
(Other classifications same as Baltimore County.)	
Carroll County. (Same as Baltimore County.)	
Cecil County:	
Electricians. (Same as Wilmington, Del.)	
Iron workers. (Same as Wilmington, Del.)	
Soft floor layers	No rate
(Other classifications same as Baltimore County.)	
Charles County. (Same as District of Columbia.)	
Dorchester County:	
Bricklayers	1.875
Carpenters	1.43
Plasterers	1.875
Soft floor layers	1.43
Stone masons	1.875
(Other classifications same as Norfolk County, Va.)	
Frederick County:	
Asbestos workers: (Frederick and northeast of Frederick, same as Baltimore County; southeast of Frederick, same as District of Columbia.)	
(Other classifications same as Baltimore County.)	
Garrett County. (Same as Allegany County.)	
Harford County. (Same as Baltimore County.)	
Howard County. (Same as Baltimore County.)	

Kent County:	Building construction
Bricklayers	$1.875
Plasterers	1.875
Soft floor layers	No rate
Stone masons	1.875
(Other classifications same as Baltimore County.)	
Montgomery County. (Same as District of Columbia.)	
Prince Georges County. (Same as District of Columbia.)	
Queen Annes County:	
Bricklayers	1.875
Plasterers	1.875
Stone masons	1.875
Soft floor layers	No rate
(Other classifications same as Baltimore County.)	
St. Marys County. (Same as District of Columbia.)	
Somerset County:	
Carpenters	1.43
Soft floor layers	1.43
(Other classifications same as Norfolk County, Va.)	
Talbot County:	
Bricklayers	1.875
Plasterers	1.875
Soft floor layers	No rate
Stone masons	1.875
(Other classifications same as Baltimore County.)	
Washington County:	
Air tool operators (jackhammermen, vibrator)	.90
Asbestos workers	1.85
Asbestos workers' imp.:	
1st year	.825
2d year	1.25
3d year	1.25
4th year	1.35
Blacksmiths	1.25
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	1.725
Carpenters, journeymen	1.30
Cement finishers	1.50
Electricians	1.625
Firemen	1.375
Oilers	1.10
Iron workers (Hagerstown and east of Hagerstown):	
Structural	1.90
Ornamental	1.90
Reinforcing	1.60
Iron workers (west of Hagerstown):	
Structural	1.75
Ornamental	1.75
Reinforcing	1.50
Laborers, building	.75
Laborers, unskilled	.75
Lathers	1.875
Marble setters	1.375
Mason tenders	.90
Mortar mixers	.90
Painters:	
Brush	1.425
Sign	1.50
Spray	1.55
Structural steel	1.55
Piledrivermen	1.30
Pipe layers (concrete and clay)	.90
Plasterers	1.50
Plasterers' tenders	.90
Plumbers	1.65
Power equipment operators. (Same as Baltimore County.)	

Washington County—Con.	Building construction
Roofers, composition	$1.50
Roofers, slate and tile	1.705
Sheet metal workers	1.85
Soft floor layers (linoleum)	1.30
Steam fitters	1.65
Stone masons	1.725
Terrazzo workers	1.75
Tile setters	1.75
Truck drivers	.80
Wicomico County:	
Carpenters	1.43
Soft floor layers	1.43
(Other classifications same as Norfolk County, Va.)	
Worcester County:	
Carpenters	1.43
Soft floor layers	1.43
(Other classifications same as Norfolk County, Va.)	

§ 807.37 *Area wage rates for Pennsylvania.*

Adams County:	Building construction
Air tool operators (jackhammermen, vibrator)	$1.10
Asbestos workers	1.725
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	1.75
Cement finishers	1.50
Electricians	1.35
Glaziers	1.25
Iron workers:	
Structural	1.87½
Ornamental	1.87½
Reinforcing	1.62½
Laborers, unskilled	.80
Lathers	1.50
Mason tenders	1.10
Mortar mixers	1.10
Painters:	
Brush	1.25
Spray	1.25
Structural steel	1.25
Pipe layers (concrete and clay)	1.10
Plasterers	1.50
Plasterers' tenders	1.10
Plumbers	1.375
Plumbers' helpers	1.10
Power equipment operators. (Same as Philadelphia County.)	
Roofers, slate and tile	1.25
Sheet metal workers	1.50
Steam fitters	1.375
Stone masons	1.75
Truck drivers:	
Service trucks	.95
Dump and flattop	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Allegheny County:	
Air tool operator (jackhammermen, vibrator)	1.15
Asbestos workers	1.875
Blasters	1.50
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	2.15
Carpenters, journeymen	2.00
Cement finishers	2.00
Electricians	2.00
Glaziers	1.685
Iron workers:	
Structural	2.00
Ornamental	2.00
Reinforcing	2.00
Laborers, building	1.15
Laborers, excavating	1.15
Lathers	2.00
Marble setters	1.75
Mason tenders	1.40
Allegheny County:	
Mortar mixers	1.40
Painters	1.85
Plasterers	2.00
Plasterers' tenders	1.40
Plumbers	2.00
Plumbers' laborers	1.25
Scaffold builders	1.50

Allegheny County—Continued.	*Building construction*
Power equipment operators:	
Crane (all types)	$2.15
Shovel (all types)	2.15
Dragline	2.15
Highlift	2.15
Other excavating machines	2.15
Pile driver	2.15
Paving mixer	2.15
Hoists (two drum)	2.15
Hoists (500 feet per minute)	2.15
Elevator (new building)	2.15
Trenching machines	2.15
Other major equipment	2.15
Pump	2.05
Concrete mixer	2.05
Compressor	2.05
Welder	2.05
Roller	2.05
One drum hoist	2.05
Tugger	2.05
Other minor equipment	2.05
Bulldozer	2.05
Grader	2.05
Fireman	1.45
Oiler	1.35
Apprentice	1.35
Special condition:	
Major machines	2.40
Minor machines	2.30
Fireman and oiler	1.50
Apprentices	1.50
Roofers:	
Pre-cast cement tile	1.875
Helpers, pre-cast cement tile	1.25
Compcsition	1.80
Slate and tile and asbestos	1.835
Helpers, slate and tile and asbestos	1.085
Sheet metal workers	1.875
Steam fitters	2.00
Stone masons	2.00
Tile setters	1.725
Tile setters' helpers	1.035
Truck drivers:	
Service trucks	1.05
Dump and flat-top trucks	1.10
Transit mixer trucks	1.125
Heavy duty trailer with high bed, 4 wheels	1.15
Heavy duty trailer with low bed, 6 to 16 wheels	1.25
Truck with dolly	1.25
Truck with dump trailer	1.25
Winch truck when winch is used to load or unload	1.40
Armstrong County:	
Asbestos workers	1.87½
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	1.75
Carpenters, journeymen	2.00
Cement finishers	1.50
Electricians	2.00
Glaziers	1.685
Iron workers:	
Structural	2.00
Ornamental	2.00
Reinforcing	2.00
Laborers, building	.75
Laborers, unskilled	.75
Lathers	2.00
Marble setters	1.75
Mason tenders	.75
Mortar mixers	.75
Painters	1.50
Plasterers	1.50
Plasterers' tenders	.75
Plumbers	1.75
Power equipment operators. (Same as Allegheny County.)	
Sheet metal workers	1.40
Steam fitters	1.75
Stone masons	1.75
Tile setters	1.725
Tile setters' helpers	1.035
Truck drivers. (Same as Allegheny County.)	

Beaver County:	*Building construction*
Air tool operators (jackhammermen, vibrator)	$1.25
Asbestos workers	1.875
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	2.00
Carpenters, journeymen	2.00
Cement finishers	1.50
Electricians	1.75
Glaziers	1.685
Iron workers:	
Structural	2.00
Ornamental	2.00
Reinforcing	2.00
Laborers:	
Building	1.00
Concrete	1.00
Unskilled	1.00
Lathers	1.75
Marble setters	1.75
Mason tenders	1.25
Mortar mixers	1.25
Painters, brush	1.725
Plasterers	1.875
Plasterers' tenders	1.25
Plumbers	1.875
Power equipment operators. (Same as Allegheny County.)	
Roofers, composition	1.80
Roofers, slate and tile	1.835
Sheet metal workers	1.875
Steam fitters	1.875
Stone masons	2.00
Tile setters	1.725
Tile setters' helpers	1.035
Truck drivers. (Same as Allegheny County.)	
Bedford County:	
Air tool operators (jackhammerman, vibrator)	.85
Asbestos workers	1.875
Bricklayers	1.50
Carpenters, journeymen	1.25
Cement finishers	1.50
Electricians	2.00
Iron workers:	
Structural	1.75
Ornamental	1.75
Reinforcing	1.50
Laborers, unskilled	.75
Plasterers	1.75
Plumbers	1.50
Power equipment operators. (Same as Allegheny County.)	
Roofers, composition	1.25
Roofers, slate and tile	1.25
Sheet metal workers	1.50
Soft floor layers (linoleum)	1.25
Steam fitters	1.50
Stone masons	1.50
Truck drivers:	
Service trucks	.95
Dump and flattop	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Berks County:	
Air tool operators (jackhammermen, vibrator)	1.15
Asbestos workers	1.875
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	1.75
Carpenters, journeymen	1.575
Cement finishers	1.50
Electricians (on work costing less than $2,000)	1.50
Electricians (on work costing $2,000 or more)	1.75
Glaziers	1.50
Iron workers:	
Structural	1.875
Ornamental	1.875
Reinforcing	1.675
Laborers, unskilled	.95
Lathers	1.75

Berks County—Continued.	*Building construction*
Marble setters	$1.75
Marble setters' helpers	1.00
Mason tenders	1.25
Mortar mixers	1.25
Painters:	
Brush	1.42
Spray	1.75
Structural steel	1.60
Pipe layers (concrete and clay)	1.15
Plasterers	1.50
Plasterers' tenders	1.25
Plumbers	1.65
Power equipment operators. (Same as Philadelphia County.)	
Roofers, composition	1.35
Roofers, slate and tile	1.45
Sheet metal workers	1.50
Soft floor layers (linoleum)	1.575
Steam fitters	1.65
Stone masons	1.75
Tile setters	1.75
Truck drivers:	
Service trucks	.95
Dump and flattop	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Blair County:	
Air tool operators (jackhammermen, vibrator)	1.00
Asbestos workers	1.875
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	1.50
Carpenters, journeymen	1.25
Cement finishers	1.25
Electricians	2.00
Glaziers	1.685
Iron workers:	
Structural	1.75
Ornamental	1.75
Reinforcing	1.50
Laborers, unskilled	.90
Lathers	1.75
Marble setters	1.75
Mason tenders	1.00
Mortar mixers	1.00
Painters:	
Brush	1.00
Spray	1.25
Structural steel	1.25
Plasterers	1.50
Plasterers' tenders	1.125
Plumbers	1.50
Power equipment operators. (Same as Allegheny County.)	
Roofers, composition	1.25
Roofers, slate and tile	1.25
Sheet metal workers	1.50
Soft floor layers (linoleum)	1.25
Steam fitters	1.50
Stone masons	1.50
Terrazzo workers	1.50
Tile setters	1.50
Tile setters' helpers	1.035
Truck drivers:	
Service trucks	.95
Dump and flattop	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Bradford County:	
Bricklayers	1.75
Stone masons	1.75
Laborers	.90
Air tool operators (jackhammermen, vibrator)	1.10
Mortar mixers	1.10

	Nonresidential
Bucks County. Same as Philadelphia County except for the classifications in the cities noted below:	
Electricians (Yardley, Morrisville, Edgely, Harriman, and Bristol)	$2.25
Iron workers:	
Structural (Yardley, Morrisville, Edgely, Harriman, and Bristol)	2.15
Ornamental (Yardley, Morrisville, Edgely, Harriman, and Bristol)	2.15
Reinforcing (Yardley, Morrisville, Edgely, Harriman, and Bristol)	2.15
	Building construction
Butler County:	
Asbestos workers	$1.875
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	2.00
Carpenters, journeymen	1.625
Cement finishers	1.50
Electricians	1.625
Glaziers	1.685
Iron workers:	
Structural	2.00
Ornamental	2.00
Reinforcing	2.00
Laborers, unskilled	1.05
Marble setters	1.75
Mason tenders	1.25
Mortar mixers	1.25
Painters, brush	1.325
Plasterers	1.75
Plumbers	1.625
Power equipment operators. (Same as Allegheny County.)	
Sheet metal workers	1.40
Soft floor layers (linoleum)	1.625
Steam fitters	1.625
Stone masons	2.00
Tile setters	1.725
Tile setters' helpers	1.035
Truck drivers. (Same as Allegheny County.)	
Cambria County:	
Air tool operators (jackhammermen, vibrator)	1.00
Asbestos workers	1.87½
Blasters	1.25
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	1.825
Carpenters, journeymen	1.50
Cement finishers	1.50
Electricians	2.00
Glaziers	1.68½
Cambria County:	
Iron workers:	
Structural	2.00
Ornamental	2.00
Reinforcing	2.00
Laborers:	
Building	.90
Concrete	.90
Unskilled	.90
Lathers	1.75
Marble setters	1.75
Mason tenders	1.00
Mortar mixers	1.00
Painters, brush	1.25
Plasterers	1.75
Plasterers' tenders	1.12½
Plumbers	1.625
Power equipment operators. (Same as Allegheny County.)	
Roofers:	
Composition	1.25
Slate and tile	1.25
Sheet metal workers	1.40
Soft floor layers (linoleum)	1.50
Steam fitters	1.625
Stone masons	1.825
Tile setters	1.72½
Tile setters' helpers	1.08½

	Building construction
Cambria County—Continued.	
Truck drivers:	
Service trucks	$0.95
Dump and flat top	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Cameron County. (No rate.)	
Carbon County:	
Asbestos workers	1.75
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers (southern part of county, including Lansford, Mauch Chunk and East Mauch Chunk)	1.75
Bricklayers (remainder of county, including Nesquehoning)	1.675
Carpenters, journeymen	1.25
Iron workers:	
Structural	1.875
Ornamental	1.875
Reinforcing	1.75
Laborers, unskilled	1.00
Mason tenders	1.25
Mortar mixers	1.25
Painters	1.15
Plasterers' tenders	1.25
Power equipment operators. (Same as Philadelphia County.)	
Sheet metal workers	1.50
Soft floor layers (linoleum)	1.25
Stone masons (southern part of county, including Lansford, Mauch Chunk and East Mauch Chunk)	1.75
Stone masons (remainder of county, including Nesquehoning)	1.675
Truck drivers:	
Service trucks	.95
Dump and flat top	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Centre County:	
Asbestos workers	1.725
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	1.75
Carpenters, journeymen	1.375
Cement finishers	1.50
Electricians	2.00
Iron workers:	
Structural	1.875
Ornamental	1.875
Reinforcing	1.625
Laborers, unskilled	.90
Lathers	1.50
Marble setters	1.65
Mason tenders	1.00
Mortar mixers	1.00
Plasterers	1.50
Plasterers' tenders	1.00
Plumbers	1.40
Power equipment operators. (Same as Allegheny County.)	
Sheet metal workers	1.50
Soft floor layers (linoleum)	1.375
Steam fitters	1.40
Stone masons	1.75
Terrazzo workers	1.375
Terrazzo workers' helpers	1.10
Tile setters	1.40
Truck drivers:	
Service trucks	.95
Dump and flat top	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Chester County. (Same as Philadelphia County except for classifications noted below):	
	Nonresidential
Painters (Phoenixville)	$1.375
Painters:	
Brush (remainder of county)	1.50
Spray (remainder of county)	1.62½
Structural steel (remainder of county)	1.62½

	Nonresidential
Clarion County:	
Air tool operators (jackhammermen, vibrator)	$0.90
Asbestos workers (locations nearer to Pittsburgh, Pa., than to Youngstown, Ohio)	1.875
Asbestos workers (locations nearer to Youngstown, Ohio than to Pittsburgh, Pa.)	1.75
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers (northern part of county including Foxburg, Sligo, and Limestone)	1.90
Bricklayers (southern part of county including Parkers Landing and Rimersburg)	1.75
Carpenters, journeymen	1.50
Cement finishers	1.25
Electricians	2.00
Glaziers	1.125
	Building construction
Laborers, building	$0.90
Laborers, unskilled	.90
Lathers	1.75
Marble setters	1.50
Mason tenders	.90
Mortar mixers	.90
Painters, brush	1.125
Plasterers	1.50
Plasterers' tenders	.90
Plumbers	1.50
Power equipment operators. (Same as Allegheny County.)	
Sheet metal workers	1.40
Soft floor layers (linoleum)	1.50
Steam fitters	1.50
Stone masons (northern part of county including Foxburg, Sligo, and Limestone)	1.90
Stone masons (southern part of county including Parkers Landing and Rimersburg)	1.75
Truck drivers:	
Service trucks	.95
Dump and flat top	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Clearfield County:	
Air tool operators (jackhammermen, vibrator)	1.00
Asbestos workers	1.875
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	1.50
Carpenters, journeymen	1.25
Cement finishers	1.50
Electricians	1.375
Iron workers:	
Structural	2.00
Ornamental	2.00
Reinforcing	2.00
Laborers, unskilled	.90
Lathers	1.50
Mason tenders	1.00
Plasterers	1.50
Plasterers' tenders	1.00
Plumbers	1.40
Power equipment operators. (Same as Allegheny County.)	
Soft floor layers (linoleum)	1.25
Steam fitters	1.40
Stone masons	1.50
Truck drivers:	
Service trucks	.95
Dump and flat top	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Clinton County:	
Asbestos workers	1.75
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	1.75
Carpenters, journeymen	1.375
Cement finishers	1.35
Electricians	1.50
Glaziers	1.25

Clinton County—Continued.	*Building construction*
Iron workers:	
Structural	$1.875
Ornamental	1.875
Reinforcing	1.625
Laborers, unskilled	.75
Lathers	1.25
Marble setters	1.65
Mason tenders	.85
Mortar mixers	.85
Painters, brush	1.25
Plasterers	1.45
Plasterers' tenders	.85
Plumbers	1.50
Power equipment operators. (Same as Allegheny County.)	
Soft floor layers (linoleum)	1.375
Stone masons	1.75
Tile setters	1.425
Truck drivers:	
Service trucks	.95
Dump and flat top	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Columbia County:	
Air tool operators (jackhammermen, vibrator)	.90
Asbestos workers	1.75
Boilermakers	1.75
Boilermakers' helpers	1.50
Carpenters, journeymen	1.50
Iron workers:	
Structural	1.875
Ornamental	1.875
Reinforcing	1.75
Laborers, unskilled	.80
Mason tenders	1.00
Mortar mixers	1.00
Plasterers' tenders	1.00
Power equipment operators. (Same as Philadelphia County.)	
Roofers	1.375
Sheet metal workers	1.50
Soft floor layers (linoleum)	1.50
Truck drivers:	
Service trucks	.95
Dump and flat top	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Crawford County:	
Air tool operators (jackhammermen, vibrator)	1.05
Asbestos workers	1.75
Boilermakers	2.00
Boilermakers' helpers	1.75
Bricklayers	1.875
Carpenters, journeymen (Titusville)	1.40
Carpenters, journeymen (Meadville)	1.525
Cement finishers	1.65
Electricians	1.625
Glaziers	1.375
Iron workers (Adamsville and Hartstown):	
Structural	1.875
Ornamental	1.875
Reinforcing	1.875
Iron workers (remainder of county):	
Structural	1.75
Ornamental	1.75
Reinforcing	1.60
Laborers, concrete	1.00
Laborers, unskilled	1.00
Lathers	1.75
Mason tenders	1.00
Mortar mixers	1.15
Painters, brush	1.375
Plasterers	1.875
Plasterers' tenders	1.15
Plumbers	1.50
Power equipment operators. (Same as Allegheny County.)	
Steam fitters	1.50
Stone masons	1.875

Crawford County—Continued.	*Building construction*
Truck drivers:	
Service trucks	$0.95
Pump and flat top	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Cumberland County:	
Air tool operators (jackhammermen, vibrator)	.95
Asbestos workers	1.725
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	1.75
Carpenters, journeymen	1.375
Cement finishers	1.625
Electricians	1.50
Glaziers	1.25
Iron workers:	
Structural	1.875
Ornamental	1.875
Reinforcing	1.625
Laborers:	
Building	.95
Concrete	.95
Unskilled	.95
Lathers	1.625
Marble setters	1.65
Mason tenders	1.125
Mortar mixers	1.125
Painters:	
Brush	1.25
Spray	1.50
Structural steel	1.50
Pipe layers (concrete and clay)	.95
Plasterers	1.625
Plasterers' tenders	1.125
Plumbers	1.44
Power equipment operators. (Same as Philadelphia County.)	
Roofers	1.23
Sheet metal workers	1.50
Soft floor layers (linoleum)	1.375
Steam fitters	1.44
Stone masons	1.75
Tile setters	1.40
Truck drivers:	
Service trucks	.95
Dump and flat top	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Dauphin County:	
Air tool operators (jackhammermen, vibrator)	.95
Asbestos workers	1.725
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	1.75
Carpenters, journeymen	1.375
Cement finishers	1.625
Electricians	1.50
Glaziers	1.25
Iron workers:	
Structural	1.875
Ornamental	1.875
Reinforcing	1.625
Laborers:	
Building	.95
Concrete	.95
Unskilled	.95
Lathers	1.625
Marble setters	1.65
Mason tenders	1.125
Mortar mixers	1.125
Painters:	
Brush	1.25
Spray	1.50
Structural steel	1.50
Pipe layers (concrete and clay)	.95
Plasterers	1.625
Plasterers' tenders	1.125
Plumbers	1.44
Power equipment operators. (Same as Philadelphia County.)	
Roofers	1.23
Sheet metal workers	1.50
Soft floor layers (linoleum)	1.375
Steam fitters	1.44

Dauphin County—Continued.	*Building construction*
Stone masons	$1.75
Tile setters	1.40
Truck drivers:	
Service trucks	.95
Dump and flat top	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
	Nonresidential
Delaware County. (Same as Philadelphia County except for classifications and locations noted below.):	
Electricians. (Chester only)	$2.00
Painters:	
Brush	1.50
Spray	1.62½
Structural steel	1.62½
Plasterers. (Radnor, Haverford, Upper Darby, Darby, Tinicum, Part of Newton north of West Chester Pike; part of Maple east of Chester Rd.; part of Springfield east of line extending from Chester Rd.; part of Ridley east of the central creek)	2.25
Plasterers (remainder of county)	1.625
Truck drivers. (No rate.)	
Elk County:	*Building construction*
Asbestos workers	$1.875
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	1.75
Carpenters, journeymen	1.375
Cement finishers	1.50
Electricians	1.375
Glaziers	1.185
Iron workers:	
Structural	1.75
Ornamental	1.75
Reinforcing	1.60
Laborers, building	.75
Laborers, unskilled	.75
Marbel setters	1.50
Mason tenders	.75
Mortar mixers	.75
Painters, brush	1.185
Plasterers	1.50
Plasterers' tenders	.75
Plumbers	1.25
Power equipment operators. (Same as Allegheny County.)	
Soft floor layers (linoleum)	1.375
Steam fitters	1.25
Stone masons	1.75
Truck drivers:	
Service trucks	.95
Dump and flat top	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Erie County:	
Air tool operators (jackhammermen, vibrator)	1.05
Asbestos workers	1.75
Boilermakers	2.00
Boilermakers' helpers	1.75
Bricklayers	1.95
Carpenters, journeymen	1.525
Cement finishers	1.625
Electricians	1.625
Firemen and oilers	1.125
Glaziers	1.35
Iron workers:	
Structural	1.75
Ornamental	1.75
Reinforcing	1.60
Laborers, building	1.00
Laborers, unskilled	1.00
Lathers	1.85
Marble setters	1.70
Mason tenders	1.05
Mortar mixers	1.15
Painters:	
Brush	1.425
Spray	1.775
Structural steel	1.525

Erie County—Continued.	Building construction
Pipe layers (concrete)	$1.05
Plasterers	1.85
Plasterers' tenders	1.15
Plumbers	1.75
Power equipment operators:	
Air compressors, under 220 cu. ft.	1.125
Air compressors, 220 cu. ft. and over	1.375
Blade graders	1.50
Bulldozers	1.50
Cranes, derricks, draglines	1.75
Mixers, less than 1 cu. yd	1.375
Mixers, 1 cu. yd. or more	1.75
Motor graders	1.50
Rollers, grade	1.375
Rollers, finish	1.50
Shovels	1.75
Tractors	1.125
Tractors and scrapers combination, high lift	1.625
Roofers, composition	1.425
Roofers, slate and tile	1.425
Sheet metal workers	1.425
Soft floor layers (linoleum)	1.525
Steam fitters	1.75
Stone masons	1.95
Terrazzo workers	1.70
Tile setters	1.70
Tile setters' helpers	1.10
Truck drivers:	
Service trucks	.95
Dump and flat top	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Fayette County:	
Air tool operators (jackhammermen, vibrator)	.75
Asbestos workers	1.875
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers (northeast corner of county including South Brownsville and excluding Rowes Run and Star Junction)	1.90
Bricklayers (remainder of county)	1.875
Carpenters, journeymen	1.625
Cement finishers	1.25
Electricians	1.50
Glaziers	1.685
Iron workers:	
Structural	2.00
Ornamental	2.00
Reinforcing	2.00
Laborers, unskilled	.75
Lathers	1.75
Marble setters	1.75
Marble setters' helpers	.75
Mason tenders	.75
Mortar mixers	.75
Painters	1.50
Plasterers	1.25
Plasterers' tenders	.75
Plumbers	1.375
Power equipment operators. (Same as Allegheny County.)	
Sheet metal workers	1.40
Soft floor layers (linoleum)	1.625
Steam fitters	1.375
Stone masons (northeast corner of county including South Brownsville and excluding Rowes Run and Star Junction)	1.90
Stone masons (remainder of county)	1.875
Terrazzo workers	1.50
Terrazzo workers' helpers	1.00
Tile settlers	1.725
Tile setters' helpers	1.035
Truck drivers. (Same as Allegheny County.)	
Forest County:	
Air tool operators (jackhammermen, vibrator)	.75
Asbestos workers	1.875
Boilermakers	1.75

Forest County—Continued.	Building construction
Boilermakers' helpers	$1.50
Bricklayers (West Forest County, including Mayburg, Kellettville and Masette)	1.90
Bricklayers (remainder of county)	1.75
Carpenters, journeymen	1.375
Cement finishers	1.50
Iron workers:	
Structural	1.75
Ornamental	1.75
Reinforcing	1.60
Laborers, unskilled	.75
Lathers	1.50
Mason tenders	.75
Mortar mixers	.75
Plasterers	1.50
Plasterers' tenders	.75
Plumbers	1.25
Power equipment operators. (Same as Allegheny County.)	
Soft floor layers (linoleum)	1.375
Steam fitters	1.25
Stone masons (West Forest County, including Mayburg, Kellettville and Masette)	1.90
Stone masons (remainder of county)	1.75
Truck drivers:	
Service trucks	.95
Dump and flat top	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Franklin County:	
Air tool operators (jackhammermen, vibrator)	1.10
Asbestos workers	1.725
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	1.75
Carpenters, journeymen	1.375
Cement finishers	1.50
Electricians	1.50
Iron workers:	
Structural	1.875
Ornamental	1.875
Reinforcing	1.625
Laborers, unskilled	.80
Lathers	1.625
Mason tenders	1.10
Mortar mixers	1.10
Pipe layers (concrete and clay)	1.10
Plasterers	1.625
Plasterers' tenders	1.10
Plumbers	1.375
Power equipment operators. (Same as Allegheny County.)	
Roofers, slate and tile	1.25
Sheet metal workers	1.50
Soft floor layers (linoleum)	1.375
Steam fitters	1.375
Stone masons	1.75
Truck drivers:	
Service trucks	.95
Dump and flat top	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Fulton County. (No rates.)	
Green County:	
Asbestos workers	1.875
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	1.875
Carpenters, journeymen	1.50
Cement finishers	1.50
Electricians	2.00
Glaziers	1.685
Iron workers:	
Structural	2.00
Ornamental	2.00
Reinforcing	2.00
Laborers, building	.725
Marble setters	1.75
Mortar mixers	1.00

Green County—Continued.	Building construction
Painters:	
Brush	$1.375
Spray	1.625
Structural steel	1.625
Plasterers	1.50
Plumbers	1.375
Power equipment operators. (Same as Allegheny County.)	
Roofers:	
Composition	1.25
Slate and tile	1.25
Sheet metal workers	1.40
Soft floor layers (linoleum)	1.50
Steam fitters	1.375
Stone masons	1.725
Tile setters	1.725
Tile setters' helpers	1.035
Truck drivers. (Same as Allegheny County.)	
Huntingdon County:	
Air tool op. (jackhammermen, vibrator)	1.00
Asbestos workers	1.875
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	1.625
Carpenters, journeymen	1.375
Cement finishers	1.50
Electricians	2.00
Glaziers	1.20
Iron workers:	
Structural	2.00
Ornamental	2.00
Reinforcing	2.00
Laborers, unskilled	.90
Lathers	1.625
Marble setters	1.65
Marble setters' helpers	.90
Mason tenders	1.00
Mortar mixers	1.00
Painters:	
Brush	1.20
Spray	1.45
Structural Steel	1.45
Plasterers	1.50
Plasterers' tenders	1.125
Plumbers	1.50
Power equipment operators. (Same as Alleghany County.)	
Sheet metal workers	1.50
Soft floor layers (linoleum)	1.375
Steam fitters	1.50
Stone masons	1.625
Truck drivers:	
Service trucks	.95
Dump and flat top	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Indiana County:	
Asbestos workers	1.875
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers (northern part of county including Plumville, Marion Center and Arcadia)	1.625
Bricklayers (southwestern part of county including Dixonville, Indiana, Lucernmines, Graceton, Black Lick and Blairsville)	2.00
Bricklayers, remainder of county, including Commodore, Clymer, Penn Run and Homer City)	1.825
Carpenters, journeymen	1.50
Cement finishers	1.25
Electricians	2.00
Iron workers:	
Structural	2.00
Ornamental	2.00
Reinforcing	2.00
Laborers, unskilled	.75
Marble setters	1.75
Mason tenders	.85
Mortar mixers	.85
Plasterers	1.50
Plasterers' tenders	.85
Power equipment operators. (Same as Allegheny County.)	
Sheet metal workers	1.40

Indiana County—Continued.	*Building construction*
Soft floor layers (linoleum)	$1.50
Stone masons (northern part of county including Plumville, Marion Center and Arcadia)	1.625
Stone masons (southwestern part of county including Dixonville, Indiana, Lucernmines, Graceton, Black Lick and Blairsville)	2.00
Stone masons (remainder of county including Commodore, Clymer, Penn Run and Homer City)	1.825
Tile setters	1.725
Truck drivers. (Same as Allegheny County.)	
Jefferson County:	
Air tool operators (jackhammermen, vibrator)	1.00
Asbestos workers	1.875
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers (southern part of county including Conifer, Big Run and Punxsutawney)	1.625
Bricklayers (northern part of county including Summerville, Knox Dale, Orita and Cramer)	1.50
Carpenters, journeymen	1.375
Electricians	1.375
Iron workers:	
Structural	2.00
Ornamental	2.00
Reinforcing	2.00
Laborers, unskilled	.90
Mason tenders	1.00
Mortar mixers	1.00
Plasterers	1.50
Plasterers' tenders	1.125
Power equipment operators. (Same as Allegheny County.)	
Soft floor layers (linoleum)	1.375
Stone masons	1.625
Truck drivers:	
Service trucks	.95
Dump and flat top	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Juniata County:	
Air tool operators (jackhammermen, vibrator)	.95
Asbestos workers	1.725
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	1.625
Carpenters, journeymen	1.375
Cement finishers	1.50
Electricians	1.625
Glaziers	1.20
Iron workers:	
Structural	1.875
Ornamental	1.875
Reinforcing	1.625
Laborers:	
Building	.95
Concrete	.95
Unskilled	.95
Lathers	1.625
Marble setters	1.65
Mason tenders	1.125
Mortar mixers	1.125
Painters:	
Brush	1.20
Spray	1.45
Structural steel	1.45
Plasterers	1.50
Plasterers' tenders	1.125
Plumbers	1.44
Power equipment operators. (Same as Philadelphia County.)	
Sheet metal workers	1.50
Soft floor layers (linoleum)	1.375
Steam fitters	1.44
Tile setters	1.40
Truck drivers:	
Service trucks	.95
Dump and flat top	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15

Lackawanna County:	*Building construction*
Air tool operator (jackhammermen, vibrator)	$1.10
Asbestor workers	1.75
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers (Carbondale)	1.75
Bricklayers (remainder of County)	1.875
Carpenters, journeymen (Scranton)	1.50
Carpenters, journeymen (Clark's Summit)	1.30
Carpenters, journeymen (Carbondale)	1.15
Cement finishers	1.575
Electricians	1.625
Glaziers	1.30
Iron workers:	
Structural	1.875
Ornamental	1.875
Reinforcing	1.75
Laborers:	
Building	.90
Concrete	.90
Unskilled	.90
Lathers	1.58⅛
Marble setters	1.75
Marble setters' helpers	.925
Mason tenders	1.10
Mortar mixers	1.10
Painters (Scranton)	1.50
Painters (Carbondale)	1.15
Plasterers (Scranton)	1.875
Plasterers (Carbondale)	1.50
Plasterers' tenders	1.10
Plumbers	1.50
Power equipment operators. (Same as Philadelphia County.)	
Roofers	1.425
Roofers, kettlemen	1.25
Roofers' helpers	1.125
Sheet metal workers	1.50
Steam fitters	1.50
Stone masons (Scranton)	1.875
Stone masons (Carbondale)	1.50
Terrazzo workers	1.75
Terrazzo workers' helpers	.925
Tile setters	1.75
Tile setters' helpers	.925
Truck drivers:	
Service trucks	.95
Dump and flat top	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Lancaster County:	
Air tool operator (jackhammermen, vibrator)	1.10
Asbestos workers	1.725
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	1.625
Carpenters, journeymen	1.375
Cement finishers	1.625
Electricians	1.50
Glaziers	1.20
Iron workers:	
Structural	1.875
Ornamental	1.875
Reinforcing	1.625
Laborers:	
Building	.80
Concrete	.80
Unskilled	.80
Lathers	1.625
Marble setters	1.65
Marble setters' helpers	.90
Mason tenders	1.10
Mortar mixers	1.10
Painters, brush	1.20
Painters, spray	1.425
Painters, structural steel	1.425
Pipe layers (concrete and clay)	1.10
Plasterers	1.625
Plasterers' tenders	1.10
Plumbers	1.50
Plumbers' app., helpers	1.10
Power equipment operators. (Same as Philadelphia County.)	

Lancaster County—Continued.	*Building construction*
Roofers	$1.23
Sheet metal workers	1.50
Soft floor layers (linoleum)	1.375
Steam fitters	1.50
Stone masons	1.625
Tile setters	1.40
Tile setters' helpers	.90
Truck drivers:	
Service trucks	.95
Dump and flat top	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Lawrence County:	
Air tool operators (jackhammermen, vibrator)	1.25
Asbestos workers	1.75
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	1.875
Carpenters, journeymen	1.625
Cement finishers	1.625
Electricians	1.625
Iron workers:	
Structural	1.875
Ornamental	1.875
Reinforcing	1.875
Laborers, building	1.00
Laborers, unskilled	1.00
Lathers	1.875
Marble setters	1.65
Marble setters' helpers	1.25
Mason tenders	1.25
Mortar mixers	1.25
Painters:	
Brush	1.375
Spray	1.625
Structural steel	1.625
Plasterers (Ellwood City)	1.625
Plasterers (New Castle)	1.875
Plasterers' tenders	1.25
Plumbers (Ellwood City)	1.625
Plumbers (Remainder of County)	1.75
Power equipment operators. (Same as Allegheny County.)	
Sheet metal workers	1.40
Soft floor layers (linoleum)	1.625
Steam fitters (Ellwood City)	1.625
Steam fitters (remainder of County)	1.75
Stone masons	1.875
Terrazzo workers	1.65
Terrazzo workers' helpers	1.25
Tile setters	1.65
Tile setters' helpers	1.25
Truck drivers. (Same as Allegheny County.)	
Lebanon County:	
Air tool operators (jackhammermen, vibrator)	1.15
Asbestos workers	1.725
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	1.75
Carpenters, journeymen	1.25
Cement finishers	1.50
Electricians	1.50
Iron workers:	
Structural	1.875
Ornamental	1.875
Reinforcing	1.625
Laborers:	
Building	.95
Concrete	.95
Unskilled	.95
Lathers	1.50
Marble setters	1.65
Mason tenders	1.25
Mortar mixers	1.25
Pipe layers (concrete and clay)	1.15
Plasterers	1.50
Plasterers' tenders	1.25
Plumbers	1.44
Power equipment operators. (Same as Philadelphia County.)	
Roofers	1.23
Sheet metal workers	1.50
Soft floor layers (linoleum)	1.25
Steamfitters	1.44

Lebanon County—Continued.	Building construction
Tile setters	$1.40
Truck drivers:	
Service trucks	.95
Dump and flat top	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Lehigh County:	
Air tool operators (jackhammermen, vibrator)	1.00
Asbestos workers	1.875
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	1.75
Carpenters, journeymen	1.50
Cement finishers	1.50
Electricians	1.75
Glaziers	1.40
Iron workers:	
Structural	2.00
Ornamental	2.00
Reinforcing	1.75
Laborers:	
Building	1.00
Concrete	1.00
Unskilled	1.00
Lathers	1.75
Marble setters	1.75
Marble setters' helpers	1.25
Mason tenders	1.25
Mortar mixers	1.25
Painters:	
Brush	1.375
Swing scaffold	1.50
Structural steel	1.625
Plasterers' tenders	1.25
Plumbers	1.75
Power equipment operators. (Same as Philadelphia County.)	
Roofers, composition	1.375
Roofers, slate and tile	1.375
Sheet metal workers	1.50
Soft floor layers (linoleum)	1.50
Steam fitters	1.75
Stone masons	1.75
Terrazzo workers	1.75
Terrazzo workers' helpers	1.25
Tile setters	1.75
Tile setters' helpers	1.25
Truck drivers:	
Service trucks	.95
Dump and flat top	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Luzerne County:	
Air tool operators (jackhammermen, vibrator)	.90
Asbestos workers	1.75
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers (Wilkes-Barre)	1.875
Bricklayers (Pittston)	1.75
Bricklayers (Hazelton)	1.675
Carpenters, journeymen	1.50
Cement finishers	1.75
Electricians (Wilkes-Barre)	1.625
Electricians (Hazelton)	1.50
Glaziers	1.30
Iron workers:	
Structural	1.875
Ornamental	1.875
Reinforcing	1.75
Laborers, unskilled	.80
Lathers	1.50
Marble setters (Wilkes-Barre)	1.75
Marble setters (Hazelton)	1.675
Mason tenders	1.00
Mortar mixers	1.00
Painters, brush (Pittston)	1.125
Painters, brush (Wilkes-Barre)	1.375
Painters, spray (Pittston)	1.125
Painters, structural steel (Pittston)	1.125
Painters, structural steel (Wilkes-Barre)	1.625
Plasterers (Pittston)	1.75

Luzerne County—Continued.	Building construction
Plasterers (Wilkes-Barre)	$1.875
Plasterers' tenders	1.00
Plumbers (Wilkes-Barre)	1.625
Plumbers (Hazelton)	1.50
Power equipment operators. (Same as Philadelphia County.)	
Roofers	1.375
Sheet metal workers	1.50
Soft floor layers (linoleum)	1.50
Steam fitters (Wilkes-Barre)	1.625
Steam fitters (Hazelton)	1.50
Stone masons (Hazelton)	1.50
Stone masons (Pittston)	1.75
Stone masons (Wilkes-Barre)	1.875
Terrazzo workers (Wilkes-Barre)	1.75
Terrazzo workers (Hazelton)	1.60
Tile setters (Wilkes-Barre)	1.75
Tile setters (Hazelton)	1.60
Truck drivers:	
Service trucks	.95
Dump and flattop	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Lycoming County:	
Air tool operators (jackhammermen, vibrator)	1.10
Asbestos workers	1.75
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	1.75
Carpenters, journeymen	1.375
Cement finishers	1.35
Electricians	1.50
Glaziers	1.25
Iron workers:	
Structural	1.75
Ornamental	1.75
Reinforcing	1.75
Laborers	.90
Lathers	1.25
Marble setters	1.65
Mortar mixers	1.10
Painters:	
Brush	1.25
Spray	1.50
Structural steel	1.25
Pipe layers (concrete and clay)	.75
Plasterers	1.45
Plumbers	1.50
Power equipment operators. (Same as Philadelphia County.)	
Roofers, composition	1.375
Roofers, slate and tile	1.375
Sheet metal workers	1.50
Soft-floor layers (linoleum)	1.375
Steam fitters	1.50
Stone masons	1.75
Terrazzo workers	1.375
Terrazzo workers' helpers	1.10
Tile setters	1.425
Truck drivers:	
Service trucks	.95
Dump and flat top	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Asbestos workers	1.87½
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers (eastern part of county including Smethport, Crosby, Port Allegheny and Betula)	1.75
Bricklayers (remainder of county)	1.875
Carpenters, journeymen	1.50
Cement finishers (eastern part of county including Smethport, Crosby, Port Allegheny and Betula)	1.75
Cement finishers (remainder of county)	1.875
Electricians	1.625
Iron workers:	
Structural	1.75
Ornamental	1.75
Reinforcing	1.75

Lycoming County—Continued.	Building construction
Laborers, unskilled	$0.60
Painters (Bradford)	1.375
Painters (Kane)	1.00
Plasterers (eastern part of county including Smethport, Crosby, Port Allegheny and Betula)	1.75
Plasterers (remainder of county)	1.875
Plumbers	1.625
Power equipment operators. (Same as Allegheny County.)	
Sheet metal workers	1.10
Soft-floor layers (linoleum)	1.50
Steam fitters	1.625
Stone masons (eastern part of county including Smethport, Crosby, Port Allegheny and Betula)	1.75
Stone masons (remainder of county)	1.675
Truck drivers:	
Service trucks	.95
Dump and flat top	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Mercer County:	
Air tool operators (jackhammermen, vibrator)	1.25
Asbestos workers	1.75
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers (Sharon)	1.875
Bricklayers (Grove City)	1.50
Bricklayers (Greenville and Shenango)	1.75
Carpenters, journeymen (Sharon and Farrell)	1.625
Carpenters, journeymen (Greenville and Grove City)	1.375
Cement finishers (Grove City)	1.25
Cement finishers (remainder of county)	1.625
Electricians	1.625
Glaziers (Greenville)	1.30
Glaziers (remainder of county)	1.125
Iron workers:	
Structural	1.875
Ornamental	1.875
Reinforcing	1.875
Laborers, building	1.00
Laborers, unskilled	1.00
Lathers	1.75
Marble setters	1.65
Marble setters' helpers	1.25
Mason tenders	1.25
Mortar mixers	1.25
Painters:	
Brush (Greenville)	1.30
Brush (Remainder of county)	1.125
Spray	1.375
Structural steel	1.375
Plasterers:	
Grove City	1.50
Remainder of county	1.75
Plumbers	1.75
Plumbers' helpers	1.10
Power equipment operators (same as Allegheny County.)	
Sheet metal workers	1.70
Steam fitters	1.75
Stone masons:	
Sharon	1.875
Grove City	1.50
Greenville and Shenango	1.75
Terrazzo workers	1.65
Terrazzo workers' helpers	1.25
Tile setters	1.65
Tile setters' helpers	1.25
Truck drivers (same as Allegheny County.)	
Mifflin County:	
Air tool operators (jackhammermen, vibrator)	1.00
Asbestos workers	1.725
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	1.625
Carpenters, journeymen	1.375

Mifflin County—Continued.	*Building construction*
Cement finishers	$1.50
Electricians	1.625
Glaziers	1.20
Iron workers:	
Structural	1.875
Ornamental	1.875
Reinforcing	1.625
Laborers:	
Building	.90
Concrete	.90
Unskilled	.90
Lathers	1.625
Marble setters	1.65
Marble setters' helpers	.90
Mason tenders	1.00
Mortar mixers	1.00
Painters:	
Brush	1.20
Spray	1.45
Structural steel	1.45
Plasterers	1.50
Plasterers' tenders	1.125
Plumbers	1.44
Power equipment operators. (Same as Allegheny County.)	
Sheet metal workers	1.50
Soft floor layers (linoleum)	1.375
Steam fitters	1.44
Stone masons	1.625
Tile setters	1.40
Tile setters' helpers	.90
Truck drivers:	
Service trucks	.95
Dump and flattop	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Monroe County:	
Abestos workers (locations nearer to Scranton than to Allentown)	1.75
Abestos workers (locations nearer to Allentown than to Scranton)	1.875
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers (northwest corner of of county including Tobyhanna and Mt. Pocono)	1.75
Bricklayers (eastern part of county including Skytop, Buck Hill Falls, Cresco, Reeders, and Stroudsburg)	1.65
Bricklayers (southwestern part of county including Pocono Pines, Effort, Brodheadsville)	1.75
Carpenters, journeymen	1.25
Cement finishers (southwest part of county including Pocono Pines, Effort, and Brodheadsville)	1.75
Cement finishers (remainder of county)	1.65
Electricians	1.375
Ironworkers:	
(Locations nearer to Scranton than to Easton):	
Structural	1.875
Ornamental	1.875
Reinforcing	1.75
(Locations nearer to Easton than to Scranton):	
Structural	1.875
Ornamental	1.875
Reinforcing	1.675
Laborers, building	1.00
Laborers, unskilled	1.00
Mason tenders	1.25
Mortar mixers	1.25
Plasterers (southwest part of county including Pocono Pines, Effort, and Brodheadsville)	1.75
Plasterers (remainder of county)	1.65
Plasterers' tenders	1.25
Plumbers	1.75
Power equipment operators. (Same as Philadelphia County.)	
Sheet metal workers	1.50
Soft floor layers (linoleum)	1.25
Steam fitters	1.75

Monroe County—Continued.	*Building construction*
Stone masons (northwest corner of county incuding Tobyhanna, and Mt. Pocono)	$1.75
Stone masons (eastern part of county including Skytop, Buck Hill Falls, Cresco, Reeders, and Stroudsburg)	1.65
Stone masons (southwestern part of county including Pocono Pines, Effort, Brodheadsville)	1.75
Truck drivers:	
Service trucks	.95
Dump and flattop	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Montgomery County. Same as Philadelphia County except for the classifications and cities' rates noted below:	
Iron workers:	*Nonresidential*
Structural (Stowe and Pottstown)	$1.875
Ornamental (Stowe and Pottstown)	1.875
Reinforcing (Stowe and Pottstown)	1.675
Painters, brush (Norristown, Royersford)	1.375
Plasterers (Norristown, Pottstown, Royersford, and Conshohocken)	1.875
Montour County:	*Building construction*
Air tool operators (jackhammermen, vibrator)	$1.10
Asbestos workers	1.75
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	1.625
Carpenters, journeymen	1.50
Electricians	1.50
Iron workers:	
Structural	1.875
Ornamental	1.875
Reinforcing	1.625
Laborers	.90
Lathers	1.375
Mortar mixers	1.10
Painters, brush	1.125
Plumbers	1.50
Power equipment operators. (Same as Philadelphia County.)	
Sheet metal workers	1.50
Soft floor layers (linoleum)	1.50
Steam fitters	1.50
Stone masons	1.625
Truck drivers:	
Service trucks	.95
Dump and flattop	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Northampton County:	
Air tool operators (jackhammermen, vibrator)	1.00
Asbestos workers	1.875
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	1.75
Carpenters, journeymen	1.50
Cement finishers	1.75
Electricians	1.875
Glaziers	1.40
Iron workers:	
Structural	2.00
Ornamental	2.00
Reinforcing	1.75
Laborers:	
Building	1.00
Concrete	1.00
Unskilled	1.00
Lathers	1.75
Marble setters	1.75
Marble setters' helpers	1.25
Mason tenders	1.25
Mortar mixers	1.25
Painters, brush	1.15

Northampton County—Con.	*Building construction*
Painters, structural steel	$1.50
Plasterers	1.75
Plasterers' tenders	1.25
Plumbers	1.75
Power equipment operators. (Same as Philadelphia County.)	
Roofers, composition	1.375
Roofers, slate and tile	1.375
Sheet metal workers	1.50
Soft floor layers (linoleum)	1.50
Steam fitters	1.75
Stone masons	1.75
Terrazzo workers	1.75
Terrazzo workers' helpers	1.25
Tile setters	1.75
Tile setters' helpers	1.25
Truck drivers:	
Service trucks	.95
Dump and flattop	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Northumberland County: No rates.)	
Perry County: (No rates.)	
Philadelphia County:	

	Nonresidential	Residential
Building construction:		
Air tool op. (jackhammermen, vibrator)	$1.025	
Asbestos workers	1.875	
Boilermakers	1.75	
Boilermakers' helpers	1.50	
Bricklayers	2.25	$2.25
Carpenters, journeymen	1.775	1.775
Cement finishers	1.75	1.75
Electricians	2.125	2.125
Glaziers	1.75	1.75
Iron workers:		
Structural	2.15	
Ornamental	2.15	
Reinforcing	1.80	
Laborers:		
Building	1.025	1.025
Street, road, sewer	1.025	
Caisson, underpinning and pier-holes	1.325	
Lathers	2.00	2.00
Machinists	1.875	
Marble setters	1.75	
Marble setters' helpers	1.30	
Mason tenders	1.025	1.125
Mortar mixers	1.025	1.125
Painters:		
Brush	1.75	1.75
Spray	1.875	
Structural steel	1.875	
Piledrivermen	1.775	
Pipe layers (concrete and clay)	1.075	
Plasterers	2.25	2.25
Plasterers' tenders	1.525	1.525
Plumbers	2.00	2.00
Painters, caulkers, cleaners	1.75	
Roofers, composition	1.575	1.575
Roofers, slate and tile	1.875	1.875
Roofers' helpers, slate and tile	1.175	
Sheet metal workers	2.00	2.00
Soft floor layers (linoleum)	1.625	1.625
Steam fitters	2.00	2.00
Stone masons	1.875	1.875
Terrazzo workers	1.875	
Terrazzo workers' helpers	1.40	
Tile setters	1.875	1.875
Tile setters' helpers	1.30	
Truck drivers	1.00	1.00
Riggers and machinery movers	1.80	

	Building construction (weekly rates)
Power equipment operators:	
Steel and stone erection	$95.00
Back hoss	90.00
Draglines	90.00
Keystones	90.00
Shovels	90.00
Trench shovels	90.00
Trench machines	90.00
Engineers working with dock builders and pile drivers	90.00
Cranes, pavers	90.00
Derricks	90.00
Cableways	90.00

Philadelphia County—Con.	*Building construction (weekly rates)*
Power equipment operators—Con.	
Building hoists (single and double drums)	$85.00
Concrete pumps	80.00
Tuggar machines	80.00
Well points	80.00
Conveyors	80.00
Compressors (1 to 3)	80.00
Welding machines	80.00
Concrete breaking machines	80.00
Pumps	80.00
Rollers	80.00
Spreaders	80.00
Scrapers	80.00
Tournalpulls	80.00
All other equipment on building and construction work not mentioned	80.00
High or low pressure boilers	80.00
Maintenance engineers	75.00
Bulldozer and tractors	70.00
Fireman	58.00
Oiler and apprentice engineers	54.00

Pike county. (No rates.)

Potter county. (No rates.)

Schuylkill county:	*Building construction*
Air tool operators (jackhammermen, vibrator)	$1.15
Asbestos workers	1.875
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers (McAdoo)	1.675
Bricklayers (remainder of county)	1.5825
Cement finishers (Shenandoah)	1.50
Glaziers	1.25
Iron workers:	
Structural	1.875
Ornamental	1.875
Reinforcing	1.675
Laborers, unskilled	.95
Mason tenders	1.25
Mortar mixers	1.25
Painters	1.25
Pipe layers (concrete and clay)	1.15
Plasterers (Shenandoah)	1.50
Plasterers' tenders	1.10
Power equipment operators. (Same as Philadelphia County.)	
Sheet metal workers	1.50
Stone masons (McAdoo)	1.675
Stone masons (remainder of county)	1.5825
Truck drivers:	
Service trucks	.95
Dump and flat top	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Snyder County:	
Air tool operators (jackhammermen, vibrator)	.95
Asbestos workers	1.725
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	1.625
Cement finishers	1.525
Electricians	1.50
Glaziers	1.20
Iron workers:	
Structural	1.875
Ornamental	1.875
Reinforcing	1.625
Laborers, unskilled	.80
Mason tenders	1.125
Mortar mixers	1.125
Painters, brush	1.25
Plasterers	1.625
Plasterers' tenders	1.125
Plumbers	1.50
Power equipment operators. (Same as Philadelphia County.)	
Sheet metal workers	1.50
Stone masons	1.625

Snyder County—Continued.	*Building construction*
Truck drivers:	
Service trucks	$0.95
Dump and flat top	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Somerset County. (No rates.)	
Sullivan County. (No rates.)	
Susquehanna County. (No rates.)	
Tioga County:	
Bricklayers	1.75
Stone masons	1.75
Laborers	.90
Air tool operators (jackhammermen, vibrator)	1.10
Mortar mixer	1.10
Union County:	
Air tool operators (jackhammermen, vibrator)	1.10
Asbestos workers (locations nearer to York than to Wilkes-Barre)	1.725
Asbestos workers (locations nearer to Wilkes-Barre than to York)	1.75
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	1.75
Carpenters, journeymen	1.375
Cement finishers	1.35
Electricians	1.50
Iron workers:	
Structural	1.875
Ornamental	1.875
Reinforcing	1.625
Laborers	.90
Lathers	1.25
Mortar mixers	1.10
Painters:	
Brush	1.25
Spray	1.50
Structural steel	1.25
Plasterers	1.45
Plumbers	1.50
Power equipment operators. (Same as Philadelphia County.)	
Sheet metal workers	1.50
Soft floor layers (linoleum)	1.375
Steam fitters	1.50
Stone masons	1.75
Truck drivers:	
Service trucks	.95
Dump and flat top	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Venango County:	
Asbestos workers	1.75
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	1.90
Carpenters, journeymen	1.50
Cement finishers	1.25
Electricians	1.50
Glaziers	1.25
Iron workers (locations nearer to Erie, Pa., than to Youngstown, Ohio):	
Structural	1.75
Ornamental	1.75
Reinforcing	1.60
Iron workers (locations nearer to Youngstown, Ohio than to Erie, Pa.):	
Structural	1.875
Ornamental	1.875
Reinforcing	1.875
Laborers, unskilled	.90
Lathers	1.75
Plasterers	1.50
Plumbers	1.625
Power equipment operators. (Same as Allegheny County.)	
Sheet metal workers	1.25
Soft floor layers (linoleum)	1.50
Steam fitters	1.625
Stone masons	1.90

Venango County—Continued.	*Building construction*
Truck drivers:	
Service trucks	$0.95
Dump and flattop	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Warren County:	
Boilermakers	1.75
Boilermakers' helpers	1.50
Carpenters, journeymen	1.375
Electricians	1.35
Iron workers:	
Structural	1.75
Ornamental	1.75
Reinforcing	1.60
Laborers, building	.875
Painters	1.275
Plumbers	1.50
Power equipment operators. (Same as Allegheny County.)	
Soft floor layers (linoleum)	1.375
Steam fitters	1.50
Truck drivers:	
Service trucks	.95
Dump and flattop	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15
Washington County:	
Asbestos workers	1.875
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers (northern part of county including Penowa, Muse, Elrama and Monongahela, excluding Avella, Canonsburg, Morganza)	2.15
Bricklayers (eastern part of county including Donora, Bentleyville, Ellsworth, Centerville and Millsboro)	1.90
Bricklayers (remainer of county)	1.875
Carpenters, journeymen	1.625
Electricians	2.00
Glaziers	1.685
Iron workers:	
Structural	2.00
Ornamental	2.00
Reinforcing	2.00
Laborers, building	.725
Marble setters	1.75
Mortar mixers	1.00
Painters, brush	1.375
Painters, spray	1.625
Painters, structural steel	1.625
Plasterers	1.50
Plumbers	1.375
Power equipment operators. (Same as Allegheny County.)	
Sheet metal workers	1.40
Soft floor layers (linoleum)	1.625
Steam fitters	1.375
Tile setters	1.725
Tile setters' helpers	1.035
Truck drivers. (Same as Allegheny County.)	
Wayne County. (No rates.)	
Westmoreland County:	
Asbestos workers	1.875
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers (Greensburg)	2.00
Carpenters, journeymen	2.00
Cement finishers (Greensburg)	1.75
Electricians	2.00
Glaziers	1.685
Iron workers:	
Structural	2.00
Ornamental	2.00
Reinforcing	2.00
Laborers, building	.75
Lathers	2.00
Mason tenders	.85
Mortar mixers	.85
Painters	1.50

Westmoreland County—Con.	*Building construction*
Plasterers (Greensburg)	$1.875
Plumbers	1.50
Power equipment operators. (Same as Allegheny County.)	
Sheet metal workers	1.875
Steam fitters	1.50
Stone masons (Greensburg)	2.00
Tile setters (Greensburg)	2.00
Truck drivers. (Same as Allegheny County.)	
Wyoming County. (No rates.)	
York County:	
Air tool operators (jackhammermen, vibrator)	1.10
Asbestos workers	1.725
Boilermakers	1.75
Boilermakers' helpers	1.50
Bricklayers	1.675
Carpenters, journeymen	1.30
Cement finishers	1.50
Electricians	1.35
Glaziers	1.25
Iron workers:	
Structural	1.875
Ornamental	1.875
Reinforcing	1.625
Laborers, unskilled	.80
Lathers	1.50
Marble setters	1.675
Mason tenders	1.10
Mortar mixers	1.10
Painters:	
Brush	1.25
Spray	1.25
Structural steel	1.25
Pipe layers (concrete and clay)	1.10
Plasterers	1.50
Plasterers' tenders	1.10
Plumbers	1.375
Plumbers' helpers	1.10
Power equipment operators. (Same as Philadelphia County).	
Roofers, slate and tile	1.25
Sheet metal workers	1.50
Soft floor layers (linoleum)	1.30
Steam fitters	1.375
Stone masons	1.675
Terrazzo workers	1.675
Tile setters	1.675
Truck drivers:	
Service trucks	.95
Dump and flat top	1.00
Transit mix	1.125
Dump trailer	1.15
Winch (when loaded or unloaded with winch)	1.15

Western Pennsylvania:

Heavy and highway construction

	Zone 1 [1]	Zone 2 [2]	Zone 3 [3]
Carpenters	$1.75	$1.50	$1.375

	Zone 1 [4]	Zone 2 [5]
Power equipment operators:		
Cableways	$1.95	$1.75
Derricks	1.95	1.75
Derrick boars	1.95	1.75
Power cranes	1.95	1.75
Power shovels	1.95	1.75
Dragline	1.95	1.75
Pile driver	1.95	1.75
Backfiller	1.95	1.75
Concrete paving mixer	1.95	1.75
Elevating grader	1.95	1.75

[1] Zone 1 counties. Allegheny, Armstrong, Beaver, Westmoreland, Washington, Cambria, Indiana, Greene, Fayette, Butler, and Lawrence.

[2] Zone 2 counties. Erie, Crawford, Warren, McKean, Elk, Forest, Jefferson, Somerset, Blair, Clarion, Centre, Mercer, Venango.

[3] Zone 3 counties. Clearfield, Cameron, Potter, Clinton, Huntingdon, Bedford, Fulton, Franklin, and Mifflin.

[4] Zone 1. Allegheny, Armstrong, Beaver, Blair, Butler, Cambria, Crawford, Erie, Fayette, Greene, Huntingdon, Indiana, Lawrence, McKean, Mercer, Somerset, Venango, Warren, Washington, and Westmoreland.

[5] Zone 2. Bedford, Cameron, Center, Clarion, Clearfield, Clinton, Elk, Forest, Franklin, Fulton, Jefferson, Mifflin, and Potter.

Western Pennsylvania—Continued.

Heavy and highway construction—Continued.

	Zone 1 [4]	Zone 2 [5]
Power equipment operators—Con.		
Hoists (2 drums or more)	$1.95	$1.75
Standard gauge locomotives	1.95	1.75
Trenching machines	1.95	1.75
Whirlers	1.95	1.75
Master mechanics	1.95	1.75
Power roller and spreader (asphalt)	1.75	1.50
Bulldozer	1.75	1.50
Power excavating carryall	1.75	1.50
Concrete pumps	1.75	1.50
Compressor (2 in bank)	1.75	1.50
Power grader	1.75	1.50
Hi-lift	1.75	1.50
Mechanics (Leed)	1.75	1.50
Concrete mixer over 1 cu. yd. (stationary plant)	1.75	1.50
Mechanics	1.50	1.35
Concrete mixer (1 cu. yd. and under)	1.50	1.35
Concrete-finishing machine and spreaders	1.50	1.35
Power roller (excluding asphalt)	1.50	1.35
Tractor, snaking and hauling	1.50	1.35
Grout pumps	1.50	1.35
Hoists	1.50	1.35
Narrow gauge locomotive	1.50	1.35
Well drillers and horizontal	1.50	1.35
Pumps (single)	1.50	1.35
Compressor (single)	1.50	1.35
Fireman	1.30	1.20
Oiler	1.20	1.10
Mechanics helper	1.20	1.10
Laborers:		
Common laborers: All labor except as specifically designated in the following classification	1.00	.90
Watchman	.62½	.55
Batcherman		
Blaster's helper		
Brakeman		
Burners		
Caissonmen (working in open air)		
Concrete blower (bulk cement)	1.05	.95
Concrete pitman, puddler and rubber		
Drill runner's helper (wagon drill)		
Form stripper and mover		
Handyman		
Sheeters and shorers		
Signalmen	1.00	.90
Asphalt tampers	1.10	1.00
Sewer pipe laborers (trenches over 10 ft)	1.10	1.00
Asphalt rakers		
Cement gun runner		
Concrete buster operator		
Form setter (road forms)		
Jackhammermen		
Pipe layers		
Plant set-up and maintenance men	1.25	1.10
Reinforcing steel placers (bending, aligning, and securing)		
Structural concrete top surfacer		
Blasters	1.50	1.50
Cement finishers (pavement)	1.50	1.35
Blacksmith		
Welders	1.40	1.25
Divers		
Paving block rammers	1.50	1.37½
Wagon drill operators		
Curb cutters and setters	1.62½	1.50
Brick and block pavers	1.67½	1.55
Water boy	.60	.50
Tunnel and shaft work:		
Miners and drillers (including lining, supporting and form workmen)	1.40	1.25
Drill runner's helper	1.25	1.10
Muckers and all other labor	1.15	1.00
Caisson and tunnel men under pressure (0 to 18 lbs.)	1.62½	1.62½

Philadelphia area: [1]

Heavy and highway construction

	Weekly basis	Daily basis
	Per hour	*Per hour*
Stone and steel erection machines	$2.375	$2.625
Piledrivers	2.25	2.375
Backhoes	2.25	2.375
Draglines	2.25	2.375

[1] Consists of counties of Philadelphia, Bucks, Chester, Montgomery and Delaware.

Philadelphia area—Continued.

Heavy and highway construction—Continued.

	Weekly basis	Daily basis
	Per hour	*Per hour*
Power shovels	$2.25	$2.375
Cranes	2.25	2.375
Keystones	2.25	2.375
Pavers, 21-E and over	2.25	2.375
Cableways	2.25	2.375
Trenching machines	2.25	2.375
Rollers—high grade finishing	2.00	2.125
Concrete breaking machines	2.00	2.125
Asphalt spreaders	2.00	2.125
Carryalls, scrapers and tournapull machines	2.00	2.125
Concrete pumps	2.00	2.125
Asphalt plant engineers	2.00	2.125
All other equipment on heavy and highway construction not mentioned	2.00	2.125
Maintenance men and welders	1.875	2.00
Compressors	1.85	1.975
Pumps, 4-inch discharge and over	1.85	1.975
Pumps, 2 or more of any size	1.85	1.975
All well point pumps	1.85	1.975
Seamen pulverizing mixer	1.75	1.875
Roller, 10 tons; Grade, fill and stone base	1.75	1.875
Bulldozer and tractors	1.75	1.875
Motor patrols	1.75	1.875
Farm tractors	1.60	1.725
Road finishing machines (concrete)	1.60	1.725
Rollers, 5 tons and under	1.60	1.725
Concrete spreader	1.60	1.725
Form line grader	1.60	1.725
Fine grade machine	1.60	1.725
Conveyor loaders	1.60	1.725
Firemen	1.45	1.575
Apprentice engineers and oilers	1.35	1.475

Eastern Pennsylvania: [1]

Heavy construction

	Weekly unit	Daily unit
Power equipment operators:		
Machines used for handling steel or stone excepting compressors	*Per hour* $2.00	*Per hour* $2.25
Shovels with shovel front attachment	2.00	2.12½
Machines used for piledriving	1.85	1.97½
Power cranes, draglines, clam shell and derricks used for excavating	2.00	2.12½
Compressors	1.70	1.95
Hoists, excepting steel or stone	1.75	1.95
Concrete mixer of one-half yard or over	1.75	1.95
All other equipment on building and construction not mentioned	1.75	1.88
Mechanics	1.75	1.88
Finishing machines (concrete)	1.75	1.85
Elevating graders	1.75	1.85
Tractors with scrapers or carry-alls	1.75	1.85
Pumps over 2-inch discharge	1.75	1.85
Pumps two or more of any size	1.75	1.85
Tractors, with or without bulldozers	1.45	1.55
Rollers on earth	1.50	1.62½
Concrete mixer under one-half yard	1.05	1.20
Firemen	1.10	1.25
Apprentices, oilers, greasers	1.05	1.20

Highway construction

	Area 2 [2]	Area 3 [3]
Carpenters	$1.50	$1.375

[1] Consists of following counties: Adams, Berks, Bradford, Carbon, Columbia, Cumberland, Dauphin, Juniata, Lackawanna, Lancaster, Lebanon, Lehigh, Luzerne, Lycoming, Monroe, Montour, Northampton, Northumberland, Perry, Pike, Schuylkill, Snyder, Sullivan, Susquehanna, Tioga, Union, Wayne, Wyoming, York.

[2] Consists of following counties: Berks, Carbon, Columbia, Cumberland, Dauphin, Lackawanna, Lancaster, Lebanon, Lehigh, Luzerne, Lycoming, Montour, Northampton, Northumberland, Schuylkill, Sullivan, Union, Wyoming, York.

[3] Consists of following counties: Adams, Bradford, Juniata, Monroe, Perry, Pike, Snyder, Susquehanna, Tioga, Wayne.

Eastern Pennsylvania—Continued.

Highway construction—Continued.

	Area 1 [4]	Area 2 [5]
Truck drivers:		
Dump and flat top trucks	$1.00	
Transit mix trucks	1.06	
Truck drivers service—Truck only R. license		$0.95
Dump and flat top trucks		1.00
For heavy duty hauling equipment heavy duty trailer		1.25
Winch trucks (when load had been loaded or unloaded with truck winch) loading, hauling and unloading		1.15
Lynn dump caterpillar		1.15
Liquid distributor trucks and operators		1.15
Koehring type dumpster		1.15
Truck—with dump trailer		1.15
Truck—with dolly or trailer		1.15
Dump truck in excess of Z license		1.15

	Area 2 [5]	Area 3 [7]
Power equipment operators:		
Cableways	$1.95	$1.75
Derricks	1.95	1.75
Derrick boats	1.95	1.75
Power cranes	1.95	1.75
Power shovels	1.95	1.75
Dragline	1.95	1.75
Pile driver	1.95	1.75
Back filler	1.95	1.75
Concrete paving mixer	1.95	1.75
Elevating grader	1.95	1.75
Hoists (2 drum or more)	1.95	1.75
Standard gage locomotives	1.95	1.75
Trenching machines	1.95	1.75
Whirlers	1.95	1.75
Master mechanics	1.95	1.75
Power roller and spreaders (asphalt)	1.75	1.50
Bulldozer	1.75	1.50
Power excavating carryall	1.75	1.50
Concrete pumps	1.75	1.50
Compressor (2 in bank)	1.75	1.50
Power grader	1.75	1.50
Hi-Lift	1.75	1.50
Mechanic (lead)	1.75	1.50
Concrete mixer over 1 cu. yd. (stationary plant)	1.75	1.50
Mechanics	1.50	1.35
Concrete mixer (1 cu. yd. and under)	1.50	1.35
Concrete finishing machine and spreaders	1.50	1.35
Power roller (excluding asphalt)	1.50	1.35
Tractors, snaking and hauling	1.50	1.35
Grout pumps	1.50	1.35
Hoists	1.50	1.35
Narrow gage locomotive	1.50	1.35
Well drillers and horizontal	1.50	1.35
Pump (single)	1.50	1.35
Compressor (single)	1.50	1.35
Firemen	1.30	1.20
Oiler	1.20	1.10
Mechanics helpers	1.20	1.10

	Area 1 [4]	Area 2 [6]	Area 3 [7]	Area 4 [8]
Common laborers: (All labor except as specifically designated in the following classifications)	$1.025	$1.00	$0.95	$0.90
Caisson men (working in open air)				
Concrete blower (bulk cement)				
Concrete pitman (puddler and rubber)		1.05	1.00	.95
Drill runner's helper (wagon drill)				
Handyman				

[1] See footnote, p. 13413, column 3.
[2] See footnote, p. 13413, column 3.
[3] See footnote, p. 13413, column 3.
[4] Consists of following counties: Bucks, Chester, Delaware, Montgomery, Philadelphia.
[5] Consists of following counties: Adams, Berks, Bradford, Carbon, Columbia, Cumberland, Dauphin, Juniata, Lackawanna, Lancaster, Lebanon, Lehigh, Luzerne Lycoming, Monroe, Montour, Northampton, Northumberland, Perry, Pike, Schuylkill, Snyder, Sullivan, Susquehanna, Tioga, Union, Wayne, Wyoming, York.
[6] Consists of following counties: Lehigh, Northampton.
[7] Consists of following counties: Berks, Carbon, Cumberland, Dauphin, Lackawanna, Lebanon, Luzerne, Monroe, Northumberland, Schuylkill.
[8] Consists of following counties: Adams, Bradford, Columbia, Juniata, Lancaster, Lycoming, Montour, Perry, Pike, Snyder, Sullivan, Susquehanna, Tioga, Union, Wayne, Wyoming, York.

Eastern Pennsylvania—Continued.

Highway construction—Continued.

	Area 1 [4]	Area 2 [6]	Area 3 [7]	Area 4 [8]
Common laborers, except—Continued.				
Signal men		$1.00	$0.95	$0.90
Asphalt tampers		1.10	1.00	1.00
Sewer pipe laborers trenches over 10 ft.)		1.10	1.00	1.00
Asphalt rakers				
Cement gun runner				
Concrete buster operator				
Form setter (road forms)				
Jackhammer men				
Pipe layers		1.10	1.10	1.10
Plant set-up and maintenance men				
Reinforcing steel placers (bending, aligning and securing)				
Structural concrete				
Top surfacer				
Blasters	$1.325	1.325	1.325	1.325
Blacksmith				
Welder		1.40	1.25	1.25
Divers				
Paving block rammers				
Wagon drill operators		1.50	1.375	1.375
Curb cutters and setters		1.625	1.50	1.50
Brick and block pavers		1.675	1.55	1.55
Tunnel and shaft work				
Miners and drillers (including lining, supporting and form workmen)		1.40	1.25	1.25
Drill runner's helper		1.25	1.10	1.10
Muckers and all other labor		1.15	1.00	1.00
Caisson and tunnel men (under pressure 0-18 lbs.)		1.625	1.625	1.625

§ 807.41 *Area wage rates for State of Tennessee.*

	Building construction
Anderson County. (Same as Knox County rates.)	
Bedford County. (Same as Coffee County rates.)	
Benton County. (Same as Gibson County rates.)	
Bledsoe County. (No rates.)	
Blount County. (Same as Knox County rates.)	
Bradley County. (Same as Hamilton County rates.)	
Campbell County. (Same as Knox County rates.)	
Cannon County. (No rates.)	
Carroll County. (Same as Gibson County rates.)	
Carter County. (Same as Greene County rates.)	
Cheatham County. (Same as Davidson County rates.)	
Chester County. (Same as Gibson County rates.	
Clairborne County. (No rates.)	
Clay County:	
Air tool operators (jackhammermen, vibrator)	$0.875
Asbestos workers	1.625
Asbesto workers imp	.90
Blacksmiths	1.50
Blacksmiths' helpers	.80
Boilermakers	1.625
Boilermakers' helpers	1.375
Bricklayers	1.875
Carpenters, journeymen	1.40
Cement finishers	1.25
Electricians	1.75
Firemen	1.00
Oilers	.90
Glaziers	1.25
Iron workers, structural	1.625
Iron workers, ornamental	1.50
Laborers:	
Building	.75
Concrete	.75
Unskilled	.75
Lathers	1.725
Machinists	1.50

Clay County—Continued.	*Building construction*
Machinists' helpers	$0.80
Marble setters	1.50
Mason tenders	.875
Mortar mixers	.875
Painters:	
Brush	1.45
Spray	1.575
Structural steel	1.575
Piledrivermen	1.40
Pipe layers (concrete and clay)	.75
Plasterers	1.75
Plasterers' tenders	.875
Plumbers	1.75
Power equipment operators:	
Air compressors—portable	1.00
Air compressors—stationary	1.25
Blade graders	1.25
Bulldozers	1.375
Cranes, derricks, draglines	1.625
Hoists, 1 drum	1.25
Hoists, 2 or more drums	1.50
Mixers (under 21–S)	1.25
Mixers (21–S or larger)	1.375
Motor graders	1.375
Piledrivers	1.625
Pumps	1.00
Rollers	1.375
Shovels	1.625
Tractors:	
Under 50 h. p	1.125
50 h. p. and over	1.375
Caterpillar, side boom	1.375
Trenching machines	1.375
Roofers, composition	1.25
Roofers, slate and tile	1.25
Sheet metal workers	1.375
Steam fitters	1.75
Stone masons or cutters	1.875
Terrazzo workers	1.50
Terrazzo workers' helpers	.75
Tile setters	1.50
Tile setters' helpers	.75
Truck drivers:	
Under 1½ tons	.80
1½ to 3 tons, flat beds, stake bodies, including drum trucks under 3 cu. yd. struck measure	.90
3 to 5 tons (incl. dump trucks 3 cu. yds. to 6 cu. yds. struck measure)	1.00
5 tons and over (incl. dump trucks 6 cu. yds. and over struck measure)	1.10
3 to 5 tons incl. special equipment such as winch and trailer trucks, tank trucks, and low boy (or float) trucks; ready mix concrete trucks	1.25
Cocke County. (No rates.)	
Coffee County:	
Air tool operators (jackhammermen, vibrator)	.75
Asbestos workers	1.625
Asbestos workers' app., imp., helpers:	
1st year	.90
2d year	1.20
3d year	1.20
4th year	1.40
Blacksmiths	.85
Blacksmiths' helpers	.60
Boilermakers	1.50
Boilermakers' helpers	1.25
Bricklayers	1.80
Carpenters, journeymen	1.40
Cement finishers	1.25
Electricians	1.50
Firemen and oilers	.75
Glaziers	1.25
Iron workers:	
Structural	1.625
Ornamental	1.625
Reinforcing	1.50
Laborers, building	.75
Lathers	1.725
Marble setters	1.80
Marble setters' helpers	.75
Mason tenders	.875
Mortar mixers	.875

Coffee County—Continued.	*Building construction*
Painters, brush	$1.40
Painters, spray	1.575
Plasterers	1.75
Plasterers' tenders	.75
Plumbers	1.75
Plumbers' app., helpers	.75
Power equipment operators (same as western Tennessee.)	
Roofers:	
Composition	1.25
Slate and tile	1.25
Helpers	.60
Sheet metal workers	1.55
Soft floor layers (linoleum)	1.40
Steam fitters	1.75
Stone masons or cutters	1.80
Terrazzo workers	1.50
Terrazzo workers' helpers	.75
Tile setters	1.50
Tile setters' helpers	.75
Truck drivers	.75
Welders	P.R.
Well drillers	1.25
Well drillers' helpers	.75
Crockett County. (Same as Dyer County.)	
Cumberland County:	
Air tool operators (jackhammermen, vibrator)	.80
Asbestos workers	1.625
Asbestos workers, imp.:	
1st year	.80
2d year	1.20
3d year	1.40
4th year	1.40
Blacksmiths	1.375
Blacksmiths' helpers	.85
Boilermakers	1.625
Boilermakers' helpers	1.375
Bricklayers	1.75
Carpenters, journeymen	1.40
Cement finishers	1.50
Electricians	1.75
Firemen	1.00
Oilers	.90
Glaziers	1.25
Iron workers:	
Structural	1.80
Ornamental	1.80
Reinforcing	1.65
Laborers:	
Building	.75
Concrete	.75
Unskilled	.75
Marble setters	1.625
Marble setters' helpers	.775
Mason tenders	.75
Mortar mixers	.80
Painters:	
Brush	1.45
Sign	1.50
Spray	1.70
Structural steel	1.70
Piledrivermen	1.40
Plasterers	1.75
Plasterers' tenders	.75
Plumbers	1.75
Plumbers' helpers	.85
Power equipment operators:	
Air compressors—portable	1.125
Air compressors—2 or more	1.375
Blade graders	1.375
Bulldozers	1.50
Cranes, derricks, draglines	1.625
Hoists, 1 drum	1.25
Hoists, 2 or more drums	1.50
Mixers (under 21-S)	1.25
Mixers (21-S or over)	1.375
Motor graders	1.375
Piledrivers	1.625
Pumps	1.10
Rollers, earth	1.10
Rollers, bituminous	1.375
Scrapers, tournapull type	1.625
Shovels	1.625
Tractors—under 50 h. p.	1.125
Tractors—50 h. p. and over	1.375
Trenching machines	1.50

Cumberland County—Con.	*Building construction*
Roofers	$1.125
Roofers' helpers	.75
Sheet metal workers	1.50
Soft floor layers (linoleum)	1.40
Steam fitters	1.75
Steam fitters' helpers	.85
Stone masons	1.75
Terrazzo workers	1.625
Terrazzo workers' helpers	.775
Tile setters	1.625
Tile setters' helpers	.775
Truck drivers:	
Under 1½ tons	.80
1½ to 3 tons, flat beds, stake bodies (including dump trucks under 3 cu. yd. struck measure)	.90
3 to 5 tons (including dump trucks 3 cu. yds. and over struck measure)	1.00
5 tons and over (including dump trucks 6 clu. yds. and over struck measure)	1.10
Special equipment such as winch and trailer trucks, tank trucks and low boy (or float) trucks; ready mix concrete trucks	1.25
Davidson County:	
Air tool operators (jackhammermen, vibrator)	.875
Asbestos workers	1.625
Asbestos workers' helpers	.90
Blacksmiths	.85
Blacksmiths' helpers	.75
Boilermakers	1.625
Boilermakers' helpers	1.375
Bricklayers	1.875
Carpenters, journeymen	1.40
Cement finishers	1.25
Electricians	1.75
Firemen and oilers	.75
Glaziers	1.25
Iron workers:	
Structural	1.625
Ornamental	1.625
Reinforcing	1.50
Laborers:	
Building	.75
Concrete	.75
Unskilled	.75
Lathers	1.725
Mechanics	1.25
Mechanics' helpers	.75
Marble setters	1.50
Marble setters' helpers	.75
Mason tenders	.875
Mortar mixers	.875
Painters:	
Brush	1.45
Sign	1.45
Spray	1.575
Structural steel	1.575
Piledrivermen	1.40
Pipe layers (concrete and clay)	.75
Plasterers	1.75
Plasterers' tenders	.875
Plumbers	1.75
Power equipment operators. (Same as western Tennessee.)	
Roofers, composition	1.25
Roofers, slate and tile	1.25
Sheet metal workers	1.375
Soft floor layers (linoleum)	1.40
Steam fitters	1.75
Steam fitters' helpers	.75
Stone masons or cutters	1.725
Terrazzo workers	1.50
Terrazzo workers' helpers	.75
Tile setters	1.50
Tile setters' helpers	.75
Truck drivers. (Same as Knox County rates.)	
Well drillers	1.25
Well drillers' helpers	.75
Decatur County. (No rates.)	
De Kalb County. (Same as Clay County.)	

Dickson County. (No rates.)	*Building construction*
Dyer County:	
Air tool operators (jackhammermen, vibrator)	$0.80
Asbestos workers	1.625
Asbestos workers' app., imp., helpers	.80
Blacksmiths	1.25
Blacksmiths' helpers	.75
Boilermakers	1.625
Boilermakers' helpers	1.375
Bricklayers	1.875
Carpenters, journeymen	1.25
Cement finishers	1.50
Electricians	1.75
Firemen	1.25
Oilers	1.00
Glaziers	1.30
Iron workers:	
Structural	1.625
Ornamental	1.625
Reinforcing	1.50
Laborers:	
Building	.75
Concrete	.75
Unskilled	.75
Lathers	1.75
Marble setters	1.75
Mason tenders	1.00
Mortar mixers	1.00
Painters:	
Brush	1.25
Spray	1.50
Structural steel	1.50
Sign	1.375
Piledrivermen	1.25
Pipe layers (concrete and clay)	.75
Plasterers	1.875
Plasterers' tenders	1.00
Plumbers	1.75
Power equipment operators. (Same as western Tennessee.)	
Roofers:	
Composition	1.50
Slate and tile	1.50
Sheet metal workers	1.625
Soft floor layers (linoleum)	1.25
Steam fitters	1.75
Stone masons	1.725
Terrazzo workers	1.75
Tile setters	1.75
Truck drivers	.75
Truck drivers, special equipment	.85
Truck drivers, winch	1.00
Welders	P.R.
Well drillers	1.25
Well drillers' helpers	.75
Fayette County. (Same as Shelby County.)	
Fentress County. (No rates.)	
Franklin County. (Same as Coffee County.)	
Gibson County:	
Air tool operators (jackhammermen, vibrator)	.80
Asbestos workers	1.625
Asbestos workers' helpers	.50
Blacksmiths	1.25
Blacksmiths' helpers	.65
Boilermakers	1.625
Boilermakers' helpers	1.375
Bricklayers	1.875
Carpenters:	
Journeymen	1.35
Tenders	.75
Cement finishers	1.25
Electricians	1.75
Firemen	1.25
Oilers	1.00
Glaziers	1.30
Iron workers:	
Structural	1.625
Ornamental	1.625
Reinforcing	1.50
Laborers:	
Building	.75
Concrete	.75
Unskilled	.75
Lathers, metal	1.75

Gibson County—Continued.	Building construction
Marble setters	$1.50
Mason tenders	1.00
Mortar mixers	1.00
Painters:	
Brush	1.25
Spray	1.625
Structural steel	1.50
Sign	1.25
Piledrivermen	1.35
Plasterers	1.565
Plasterers' tenders	1.00
Plumbers	1.75
Power equipment operators. (Same as western Tennessee.)	
Roofers:	
Composition	1.125
Slate and tile	1.25
Sheet metal workers	1.625
Soft floor layers (linoleum)	1.35
Steam fitters	1.75
Steam fitters' helpers	.775
Stone masons	1.875
Terrazzo workers	1.50
Tile setters	1.50
Truck drivers up to 3 tons	.65
Truck drivers, 3 tons and over	.75
Welders	P.R.
Well drillers 6 inches and over	1.25
Well drillers' helpers	.75
Giles County. (No rates.)	
Grainger County. (No rates.)	
Greene County:	
Air tool operators (jackhammermen, vibrator)	.80
Asbestos workers	1.625
Asbestor workers, imp.:	
1st year	.90
2d year	1.20
3d year	1.40
4th year	1.40
Blacksmiths	1.375
Blacksmiths' helpers	.85
Boilermakers	1.625
Boilermakers' helpers	1.375
Bricklayers	1.75
Carpenters, journeymen	1.40
Carpenters, tenders	.75
Cement finishers	1.50
Electricians	1.75
Firemen	1.00
Oilers	.90
Glaziers	1.25
Iron workers:	
Structural	1.80
Ornamental	1.80
Reinforcing	1.625
Laborers, unskilled	.65
Lathers	1.50
Machinists	1.375
Machinists' helpers	.80
Marble setters	1.625
Marble setters' helpers	.80
Mason tenders	.75
Mortar mixers	.80
Painters, brush	1.45
Painters, sign	1.50
Piledrivermen	1.40
Pipe layers (concrete and clay)	.75
Plasterers	1.625
Plasterers' tenders	.75
Plumbers	1.625
Plumbers' helpers	.875
Power equipment operators:	
Air compressors, portable	1.125
Air compressors, stationary	1.375
Blade graders	1.375
Bulldozers	1.50
Cranes, derricks, draglines	1.625
Distributors (bituminous surfaces)	1.375
Hoists, 1 drum	1.25
Hoists, 2 or more drums	1.50
Mixers (under 21-S)	1.25
Mixers (21-S and over)	1.375
Motor graders	1.375
Power graders	1.125
Piledrivers	1.625
Pumps	1.10

Greene County—Continued.	Building construction
Power equipment operators—Con.	
Rollers, earth	$1.10
Rollers, bituminous	1.375
Scrapers, pan turnapull type	1.625
Shovels	1.625
Tractors, under 50 h. p.	1.125
Tractors, 50 h. p. and over	1.375
Trenching machines	1.50
Roofers	1.25
Roofers' helpers	.625
Sheet metal workers	1.50
Soft floor layers (linoleum)	1.40
Steam fitters	1.625
Steam fitters' helpers	.875
Terrazzo workers	1.50
Terrazzo workers' helpers	.80
Tile setters	1.50
Tile setters' helpers	.80
Truck drivers under 3½ tons (dump, under 3 cu. yds.)	.75
3½–7½ tons (3–6 cu. yds.)	.90
7½ and over (6 cu. yds. and over)	1.00
7½ and over, tractor or crawler type	1.00
Special equipment	1.00
Fuel oil	.90
Welders	P.R.
Well drillers, 6" and over	1.25
Well drillers' helpers	.75
Grundy County. (No rates.)	
Hamblen County. (Same as Greene County.)	
Hamilton County:	
Air tool operators (jackhammermen, vibrator)	.85
Asbestos workers	1.625
Asbestos workers' imp.:	
1st year	.90
2d year	1.20
3d year	1.40
4th year	1.40
Blacksmiths	1.375
Blacksmiths' helpers	.80
Boilermakers	1.625
Boilermakers' helpers	1.375
Bricklayers	1.80
Carpenters, journeymen	1.55
Cement finishers	1.55
Electricians	1.75
Firemen	1.10
Oilers	1.00
Glaziers	1.25
Iron workers:	
Structural	1.80
Ornamental	1.80
Reinforcing	1.65
Laborers, building	.75
Lathers	1.50
Machinists	1.375
Mechanics (heavy equip.)	1.80
Marble setters	1.80
Marble setters' helpers	.85
Mason tenders	.85
Mortar mixers	.90
Painters:	
Brush	1.50
Spray	1.40
Structural steel	1.40
Sign	1.50
Piledrivermen	1.55
Pipe layers (concrete and clay)	.90
Plasterers	1.80
Plasterers' tenders	.85
Plumbers	1.80
Power equipment operators:	
Air compressors, single	1.10
Air compressors, double	1.375
Blade graders	1.50
Bulldozers	1.50
Cranes, derricks, draglines	1.80
Distributors (bituminous surfaces)	1.375
Finishing machine (cem. conc. pave.)	1.375
Hoists, 1 drum	1.375
Hoists, 2	1.65
Mixers (2 b's or smaller)	1.10
Mixers (larger than 2 b's)	1.375

Hamilton County—Continued.	Building construction
Power equipment operators—Con.	
Motor graders	$1.50
Piledrivers	1.80
Pumps, 2–3	1.375
Pumps, 1	1.10
Rollers	1.375
Scrapers	1.65
Shovels	1.80
Tractors	1.375
Trenching machines	1.50
Roofers:	
Composition	1.50
Slate and tile	1.50
Helpers	.75
Sheet metal workers	1.65
Soft floor layers (linoleum)	1.55
Steam fitters	1.80
Stone masons or cutters	1.80
Terrazzo workers	1.80
Terrazzo workers' helpers	.85
Tile setters	1.80
Tile setters' helpers	.85
Truck drivers:	
Up to 3 tons	.90
3 to 5 tons	1.05
Over 5 to 7 tons	1.20
7 tons and over, winch	1.30
Well drillers	1.25
Hancock County. (No rates.)	
Hardeman County. (No rates.)	
Hardin County. (No rates.)	
Hawkins County. (Same as Greene County.)	
Haywood County. (No rates.)	
Henderson County. (Same as Gibson County.)	
Henry County. (No rates.)	
Hickman County. (Same as Davidson County.)	
Houston County. (No rates.)	
Humphreys County. (No rates.)	
Jackson County. (No rates.)	
Jefferson County. (Same as Knox County.)	
Johnson County. (No rates.)	
Knox County:	
Air tool operators (jackhammermen, vibrator)	.80
Asbestos workers	1.625
Asbestos workers' imp., (1–4 yrs.):	
1st year	.90
2d year	1.20
3d year	1.40
4th year	1.40
Blacksmiths	1.375
Blacksmiths' helpers	.85
Boilermakers	1.625
Boilermakers' helpers	1.375
Bricklayers	1.75
Carpenters, journeymen	1.40
Cement finishers	1.50
Electricians	1.75
Firemen	1.00
Glaziers	1.25
Iron workers:	
Structural	1.80
Ornamental	1.80
Reinforcing	1.65
Laborers:	
Building	.75
Concrete	.75
Unskilled	.75
Lathers	1.50
Machinists	1.50
Machinists' helpers	.80
Marble setters	1.625
Marble setters' helpers	.775
Mason tenders	.75
Mortar mixers	.80
Painters:	
Brush	1.45
Sign	1.50
Spray	1.70
Structural steel	1.70
Piledrivermen	1.40
Pipe layers (concrete and clay)	1.00
Plasterers	1.75
Plasterers' tenders	.75
Plumbers	1.75
Plumbers' helpers	.85

Knox County—Continued.	*Building construction*
Power equipment operators:	
Air compressors (portable)	$1.125
Air compressors, 2 or more	1.375
Blade graders	1.375
Bulldozers	1.50
Cranes, derricks, draglines	1.625
Hoists, 1 drum	1.25
Hoists, 2 or more drums	1.50
Mixers (under 21-S)	1.25
Mixers (21-S and over)	1.375
Motor graders	1.375
Piledrivers	1.625
Pumps	1.10
Rollers (earth)	1.10
Rollers (bituminous)	1.375
Scrapers, pan, turnapull type	1.625
Shovels	1.625
Tractors (under 50 h. p.)	1.125
Tractors (50 h. p. and over)	1.375
Trenching machines	1.50
Roofers, composition	1.125
Roofers, slate and tile	1.125
Roofers' helpers	.75
Sheet metal workers	1.50
Soft floor layers (linoleum)	1.40
Steam fitters	1.75
Steam fitters' helpers	.85
Stone masons or cutters	1.75
Terrazzo workers	1.625
Terrazzo workers' helpers	.775
Tile setters	1.625
Tile setters' helpers	.775
Truck drivers:	
Under 1½ tons (and dump trucks under 3 cu. yds.)	.80
1½-3 tons (and dump trucks 3-6 cu. yds.)	.90
3-5 tons (6 cu. yds. and over)	1.00
5-6 tons and over, tractor and crawler type	1.10
Special equipment (winch, refrigerator and trailer truck)	1.25
Welders	P.R.
Well drillers, 6-inch and over	1.25
Well drillers' helpers	.75
Lake County. (Same as Dyer County.)	
Lauderdale County:	
Electricians	1.50
Power equipment operators. (Same as Western Tennessee.)	
All other classifications same as Dyer County.	
Lawrence County. (No rates.)	
Lewis County. Same as Davidson County.)	
Lincoln County. (No rates.)	
London County. (No rates.)	
McMinn County. (No rates.)	
McNairy County. (No rates.)	
Macon County. (No rates.)	
Madison County. (Same as Gibson County.)	
Marion County. (No rates.)	
Marshall County. (Same as Davidson County.)	
Maury County. (Same as Davidson County.)	
Meigs County. (No rates.)	
Monroe County. (No rates.)	
Montgomery County:	
Air tool operators (jackhammermen, vibrator)	.875
Asbestos workers	1.625
Asbestos workers' imp	.90
Boilermakers	1.625
Boilermakers' helpers	1.375
Bricklayers	1.625
Carpenters, journeymen	1.25
Cement finishers	1.25
Electricians	1.75
Firemen	1.25
Oilers	1.00
Glaziers	1.125
Iron workers:	
Structural	1.625
Ornamental	1.625
Reinforcing	1.50
Laborers, building	.75
Laborers, unskilled	.75
Lathers	1.725
Marble setters	1.75
Marble setters' helpers	.75

Montgomery County—Con.	*Building construction*
Mason tenders	$0.875
Mortar mixers	.875
Painters:	
Brush	1.125
Spray	1.50
Sign	1.25
Piledrivermen	1.25
Pipe layers (concrete and clay)	.75
Plasterers	1.50
Plasterers' tenders	.875
Plumbers	1.75
Power equipment operators. (Same as western Tennessee.)	
Roofers, composition	1.25
Roofers, slate and tile	1.25
Sheet metal workers	1.375
Soft floor layers (linoleum)	1.25
Steam fitters	1.75
Stone masons	1.625
Terrazzo workers	1.75
Terrazzo workers' helpers	.75
Tile setters	1.75
Tile setters' helpers	.75
Truck drivers:	
Under 1½ tons	.80
1½ to 3 tons, flat beds, stake bodies (incl. dump trucks, under 3 cu. yd. struck measure)	.90
3 to 5 tons (incl. dump trucks 3 cu. yds. to 6 cu. yds. struck measure)	1.00
5 tons and over (incl. dump trucks 6 cu. yds. and over struck measure)	1.10
Special equipment such as winch and trailer trucks, tank trucks and low boy (or float) trucks; ready mix concrete trucks	1.25
Moore County. (No rates.)	
Morgan County. (No rates.)	
Obion County. (Same as Dyer County.)	
Overton County. (No rates.)	
Perry County. (No rates.)	
Pickett County. (Same as Clay County.)	
Polk County. (Same as Hamilton County.)	
Putnam County. (Same as Clay County.)	
Rhea County. (Same as Hamilton County.)	
Roane County. (Same as Knox County.)	
Robertson County. (Same as Davidson County.)	
Rutherford County. (Same as Davidson County.)	
Scott County. (No rates.)	
Sequatchie County. (No rates.)	
Sevier County. (Same as Knox County.)	
Shelby County:	
Air tool operators (jackhammermen, vibrator)	1.00
Asbestos workers	1.625
Asbestos workers' imp	.80
Blacksmiths	1.25
Blacksmiths' helpers	.75
Boilermakers	1.625
Boilermakers' helpers	1.375
Bricklayers	1.9375
Carpenters, journeymen	1.50
Cement finishers	1.50
Cement finishers' helpers	.75
Electricians	1.75
Firemen	1.25
Oilers	1.00
Glaziers	1.30
Iron workers:	
Structural	1.625
Ornamental	1.625
Reinforcing	1.50
Laborers, building	1.00
Lathers	1.75
Marble setters	1.75
Mason tenders	1.00
Mortar mixers	1.00
Painters:	
Brush	1.50

Shelby County—Continued.	*Building construction*
Painters—Continued.	
Spray	$1.625
Structural steel	1.625
Sign	1.625
Piledrivermen	1.50
Pipe layers (concrete and clay)	.85
Plasterers	1.875
Plasterers' tenders	1.00
Plumbers	1.75
Power equipment operators. (Same as western Tennessee.)	
Roofers, composition	1.50
Roofers, slate and tile	1.50
Sheet metal workers	1.625
Soft floor layers (linoleum)	1.50
Steam fitters	1.75
Stone masons	1.9375
Stone masons' tenders	1.00
Terrazzo workers	1.75
Terrazzo workers' helpers	.75
Tile setters	1.75
Tile setters' helpers	.75
Truck drivers	.75
Special equipment	.85
Winch	1.00
Welders	P.R.
Well drillers	1.25
Well drillers' helpers	1.00
Smith County. (No rates.)	
Stewart County. (No rates.)	
Sullivan County. (Same as Greene County.)	
Sumner County. (Same as Davidson County.)	
Tipton County. (Same as Shelby County.)	
Trousdale County. (No rates.)	
Unicoi County. Same as Greene County.)	
Union County. (No rates.)	
Van Buren County:	
Bricklayers	1.75
Bricklayers' apprentices:	
1st year	.65
2d year	.80
3d year	.95
4th year	1.10
Cement finishers	1.50
Electricians	1.75
Electricians—apprentices:	
1st 6 months	.65
2d 6 months	.775
2d year	.925
3d year	1.075
4th year	1.225
Firemen	1.00
Iron workers, structural	1.80
Iron workers, reinforcing	1.65
Laborers:	
Building	.75
Concrete	.75
Unskilled	.75
Machinists	1.50
Machinists' helpers	.85
Mortar mixers	.80
Oilers	.90
Painters:	
Brush	1.45
Spray	1.70
Structural steel	1.70
Pipe layers (concrete and clay)	1.00
Power equipment operators:	
Blade graders	1.375
Bulldozers	1.50
Cranes, derricks, draglines	1.625
Mixers, under 21-S	1.25
Motor graders	1.375
Pumps	1.10
Rollers, earth	1.10
Rollers, bituminous	1.375
Scrapers (pan, turnapull type)	1.625
Shovels	1.625
Tractors, under 50 h. p.	1.125
Tractors, 50 h. p. and over	1.375
Sheet metal workers	1.50
Truck drivers:	
Under 1½ tons	.80
1½ to 3 tons, flat beds, stake bodies, incl. dump trucks under 3 cu. yds. struck measure	.90

Van Buren County—Continued	*Building construction*
Truck drivers—Continued.	
3 to 5 tons (incl. dump trucks 3 cu. yds. to 6 cu. yds. struck measure)	$1.00
5 tons and over (incl. dump trucks 6 cu. yds. and over struck measure)	1.10
Special equipment such as winch and trailer trucks, tank trucks and low boy (or float) trucks; ready mix concrete trucks	1.25
Warren County. (Same as Clay County.)	
Washington County. (Same as Greene County.)	
Wayne County. (No rates.)	
Weakley County:	
Air tool operators (jackhammermen, vibrator)	.80
Asbestos workers	1.625
Asbestos workers' improvers	.80
Blacksmiths	1.25
Blacksmiths' helpers	.75
Boilermakers	1.625
Boilermakers' helpers	1.375
Bricklayers	1.875
Carpenters, journeymen	1.40
Cement finishers	1.25
Electricians	1.75
Electricians' apprentices:	
1st 6 months	.60
2d 6 months	.70
2d year	.85
3d year	1.10
4th year	1.35
Firemen	1.25
Oilers	1.00
Glaziers	1.125
Iron workers:	
Structural	1.75
Ornamental	1.75
Reinforcing	1.625
Apprentices, structural ornamental	1.25
Reinforcing apprentices	1.25
Laborers:	
Building	.75
Concrete	.75
Unskilled	.75
Lathers:	
Metal	1.75
Wood	1.75
Marble setters	1.50
Marble setters' helpers	.75
Mason tenders	1.00
Mortar mixers	1.00
Painters:	
Brush	1.375
Spray	1.625
Structural steel	1.50
Piledrivermen	1.40
Plasterers	1.70
Plasterers' tenders	1.00
Plumbers	1.75
Power equipment operators:	
Air compressors, portable	1.25
Air compressors, stationary	1.375
Backfillers	1.50
Blade graders	1.375
Bulldozers, 40 h. p. or under	1.25
Bulldozers, over 40 h. p.	1.50
Cranes, derricks, draglines	1.75
Derricks, no boom	1.50
Distributors (bituminous surfaces)	1.50
Finishing mach. (cem. conc. pave.)	1.375
Hoists, 1 drum	1.375
Hoists, 2 or more drums	1.625
Mixers, under 14–S	1.25
Mixers, 14–S or larger	1.50
Motor graders	1.375
Piledrivers	1.75
Pumps, under 3" discharge	.85
Pumps, on excavation	1.00
Rollers	1.50
Scrapers, under 12 yards	1.375
Scrapers, over 12 yards	1.50
Shovels	1.75

Weakley County—Continued.	*Building construction*
Power equipment operators—Con.	
Tractors, 40 h. p. or less	$1.25
Tractors, over 40 h. p.	1.375
Trenching machines	1.50
Roofers:	
Composition	1.25
Slate and tile	1.25
Helpers	.75
Sheet metal workers	1.625
Soft floor layers (linoleum)	1.40
Steam fitters	1.75
Steam fitters' helpers	.775
Stone masons	1.875
Terrazzo workers	1.50
Terrazzo workers' helpers	.75
Tile setters	1.50
Tile setters' helpers	.75
Truck drivers	.75
Special equipment	.85
Winch	1.00
Welders (receive rate prescribed for craft performing operation to which welding is incidental).	
White County:	
Bricklayers	1.75
Bricklayers' apprentices:	
1st year	.65
2d year	.80
3d year	.95
4th year	1.10
Cement finishers	1.50
Electricians	1.75
Electricians' apprentices:	
1st 6 months	.65
2d 6 months	.775
2d year	.925
3d year	1.075
4th year	1.225
Firemen	1.00
Iron workers:	
Structural	1.80
Reinforcing	1.65
Apprentices:	
1st 6 months 50% of journeymen's rate.	
2d 6 months 60% of journeymen's rate.	
2d year 66⅔% of journeymen's rate.	
Laborers:	
Building	.75
Concrete	.75
Unskilled	.75
Machinists	1.50
Machinists' helpers	.85
Mortar mixers	.80
Oilers	.90
Painters:	
Brush	1.45
Spray	1.70
Structural steel	1.70
Pipe layers (concrete and clay)	1.00
Power equipment operators:	
Blade graders	1.375
Bulldozers	1.50
Cranes, derricks, draglines	1.625
Mixers, under 21-S	1.25
Motor graders	1.375
Pumps	1.10
Rollers, earth	1.10
Rollers, bituminous	1.375
Scrapers (pan, turnapull type)	1.625
Shovels	1.625
Tractors, under 50 h. p.	1.125
Tractors, 50 h. p. and over	1.375
Sheetmetal workers	1.50
Truck drivers:	
Under 1½ tons	.80
1½ to 3 tons, flat beds, stake bodies, incl. dump trucks under 3 cu. yds. struck measure	.90
3 to 5 tons (incl. dump trucks 3 cu. yds. to 6 cu. yds. struck measure)	1.00
5 tons and over (incl. dump trucks 6 cu. yds. and over struck measure)	1.10

White County—Continued.	*Building construction*
Truck drivers—Continued.	
Special equipment such as winch and trailer trucks, tank trucks and low boy (or float) trucks; ready mix concrete trucks	$1.25
Williamson County. (Same as Davidson County.)	
Wilson County. (Same as Davidson County.)	
Western Tennessee. (46 west Tennessee counties, west of and including Sumner, Wilson, Rutherford, Coffee, and Franklin Counties):	
Operating engineers:	
Air compressors, portable	1.25
Air compressors, stationary	1.375
Backfillers	1.50
Blade graders	1.375
Bulldozers, 40 h. p. or under	1.25
Bulldozers, over 40 h. p.	1.50
Cranes, derricks, draglines	1.75
Derricks, no boom	1.50
Distributors (bituminous surfaces)	1.50
Finishing mach. (cem. conc. pave.)	1.375
Hoists, 1 drum	1.375
Hoists, 2 or more drums	1.625
Mixers, under 14–S	1.25
Mixers, 14–S and larger	1.50
Motor graders	1.375
Piledrivers	1.75
Pumps, under 3" discharge	.85
Pumps, on excavation	1.00
Rollers	1.50
Scrapers, under 12 yards	1.375
Scrapers, over 12 yards	1.50
Shovels	1.75
Tractors, 40 h. p. or less	1.25
Tractors, over 40 h. p.	1.375
Trenching machines	1.50

Statewide rates:	*Highway construction*
Shovel, drag line and derrick operators	1.50
Scraper operator	1.25
Bulldozer operator	1.25
Ditching machine operator, large	1.25
Ditching machine operator, small	1.00
Crane operator	1.25
Hoisting engine operator, 2 drums	1.25
Hoisting engine operator, 1 drum	1.00
Pile driver operator	1.25
Paver mixer operator	1.25
Carpenters:	
Journeymen	1.25
Apprentices:	
First year, 40 percent of journeymen.	
Second year, 50 percent of journeymen.	
Third year, 70 percent of journeymen.	
Fourth year, 85 percent of journeymen.	
Cement finisher	1.25
Master mechanic	1.50
Mechanic, heavy duty	1.25
Mechanic, light duty	1.00
Asphalt spreader (finisher) operator	1.00
Roller operator:	
Asphalt, high type surface	1.00
Asphalt, low type surface	.75
Earth	.75
Motor patrol operator	1.125
Tractor operator	1.00
Industrial, tractor operator (farm tractor)	.65
Pusher operator	1.00
Euclid driver	1.00
Mixer operator, over No. 10–S	1.00
Mixer operator, No. 10–S and under	.80
Air compressor operator	1.00
Wagon drill operator	.90
Jack hammer operator	.75
Jack hammer operator, Memphis	.80

Statewide rates—Continued.	*Highway construction*
Powder man, heavy	$1.00
Powder man, miscellaneous work, including light rock	.75
Ashpalt distributor:	
Operator	1.00
Driver, 1½ to 2 ton	.65
Driver, over 2 ton	.85
Fireman, 20 h. p. boiler and up	.90
Fireman, 5 h. p. to 20 h. p. boiler	.75
Asphalt mixer men, up to 4,000 lbs	.75
Asphalt mixer man, above 4,000 lbs	1.00
Asphalt raker	.75
Paving fine grader operator	1.00
Concrete spreader operator	1.00
Concrete finishing machine operator	1.00
Cleft plane operator	.75
Form setter, road	.75
Bucket loader operator	.65
Belt conveyor operator	.65
Broom operator	.65
Batch scale operator	.65
Oiler	.75
Form grader operator	.75
Pump man	.75
Truck driver:	
1½ tons and less, manufacturers' rated capacity	.60
Over 1½ to 3 tons, manufacturers' rated capacity	.65
Over 3 tons, manufacturers' rated capacity	.85
Vibrator operator	.65
Concrete puddler	.65
Truck dumper	.60
Pipe layer	.60
Pipe layer, Memphis	.85
Concrete rubber	.65
Common labor:	
Western counties of Tennessee	.575
Memphis	.75
Eastern portion of Tennessee comprising the following counties: Johnson, Carter, Sullivan, Washington, Unicoi, Fawkins, Greene, Hancock, Clairborne, Union, Grainger, Hamblen, Jefferson, Cocke, Sevier, Blount, Knox, Anderson, Campbell, Scott, Morgan, Roane, Loudon, Monroe, Polk, Bradley, McMinn, Meigs, Rhea, Cumberland, Fentress, Pickett, Clay, Overton, Jackson, Putnam, White, Van Buren, Bledsoe, Sequatchie, Hamilton, and Marion	.625

(56 Stat. 765; 50 U. S. C. App. 961–971; E. O. 9250, Oct. 3, 1942; E. O. 9381, Sept. 25, 1943; E. O. 9672, Dec. 31, 1945; E. O. 9697, Feb. 14, 1946, 7 F. R. 7871, 8 F. R. 13083, 11 F. R. 221, 1691; Regulation, Director of Economic Stabilization, dated Mar. 8, 1946, 11 F. R. 2517)

B. M. JOFFE,
Executive Director.

[F. R. Doc. 46–20095; Filed, Nov. 8, 1946; 8:45 a. m.]

TITLE 24—HOUSING CREDIT

Chapter VIII—Office of Housing Expediter

[HED–121–RFC–20]

PART 802—DELEGATIONS OF FINAL AUTHORITY

DIRECTIVE TO RECONSTRUCTION FINANCE CORPORATION WITH RESPECT TO MERCHANT PIG IRON

§ 802.8 *Directive to the Reconstruction Finance Corporation on Premium Payments Regulation 9 (§ 805.9 of this chapter) with respect to merchant pig iron.* This directive assigns to the Reconstruction Finance Corporation responsibilities which are necessary to assure effective administration of Premium Payments Regulation 9, issued September 19, 1946, on merchant pig iron (11 F. R. 10578), and in addition it summarizes responsibilities assigned to the RFC by § 805.9 of this chapter.

(a) Pursuant to the authority vested in me by the Veterans' Emergency Housing Act of 1946, the RFC is hereby authorized and directed to perform the following functions in addition to those assigned to it by § 805.9 of this chapter:

(1) The RFC will review claims for payment or information returns for completeness of entries and for accuracy of computations, and, after making payments as provided for by the regulation, forward three copies of the claim or the information return to the Civilian Production Administration, Metals Division, and two copies to the Office of the Housing Expediter, Washington, D. C., attention: Office of Materials Supply.

(2) Furnish to the CPA at its request, serial numbers to be inserted on the quota application form by CPA.

(3) The RFC shall notify the applicant of any changes in a claim.

(4) The RFC shall act upon advice from the CPA with respect to such authority delegated to CPA by the Housing Expediter as affects the functions of the RFC in the program.

(5) The RFC shall prepare and transmit to the OHE such regular and special reports of its operation under § 805.9 of this chapter as may be requested by the OHE.

(6) The RFC shall take all other steps necessary to carry out the responsibilities of the RFC under § 805.9 of this chapter.

(b) Responsibilities assigned to RFC by § 805.9 of this chapter, together with appropriate reference to related delegations to the CPA, are summarized as follows:

(1) The RFC will furnish Quota Forms NHA 14–98 and Claim Forms NHA 14–99 and certification Forms NHA 14–107 to applicants on request, through its loan agencies.

(2) The RFC will receive claims for payment and information returns and:

(i) Determine whether such claims appear to have been correctly and properly prepared.

(ii) Subject to final verification by CPA, pay all or any part of a claim accepted by RFC. If any part of a claim is questionable after review or audit by CPA, the RFC may:

(*a*) Require that a bond satisfactory in form and amount be furnished by the claimant, or

(*b*) Suspend further payments.

(3) The RFC may require that a bond satisfactory in form and amount be furnished by any claimant for the last two months during which § 805.9 of this chapter is in effect.

(4) If the amount verified and approved for payment by CPA is less than the amount previously paid, or if the claim is invalidated in whole or in part, the RFC shall notify the claimant of the overpayment, or the invalidation, and:

(i) Demand that the claimant refund the overage, or the amount invalidated, plus interest at the rate of 4 percent per annum, or

(ii) Deduct sum plus interest from any accrued or subsequent claim of the claimant.

(c) Should the RFC find that it has entered or anticipates entering into any subsidy agreement that covers any merchant pig iron products, the RFC shall immediately advise the OHE of such agreement of subsidy.

(60 Stat. 207)

Issued this 4th day of November 1946.

WILSON W. WYATT,
Housing Expediter.

[F. R. Doc. 46–20125; Filed, Nov. 8, 1946; 8:48 a. m.]

[HED–120–CPA–11]

PART 802—DELEGATIONS OF FINAL AUTHORITY

DIRECTIVE TO CIVILIAN PRODUCTION ADMINISTRATION WITH RESPECT TO MERCHANT PIG IRON

§ 802.9 *Directive to the Civilian Production Administration on Premium Payments Regulation 9 (§ 805.9 of this chapter) with respect to merchant pig iron.* This directive states the responsibility of the Civilian Production Administration for the administration of Premium Payments Regulation 9 (§ 805.9 of this chapter), issued September 19, 1946 relating to merchant pig iron (11 F. R. 10578).

(a) Pursuant to the authority vested in me by the Veterans' Emergency Housing Act of 1946, the Civilian Production Administration is hereby authorized and directed to act as my representative in performing the following functions in accordance with § 805.9 of this chapter:

(1) Upon receipt of each application for establishment of quota in accordance with § 805.9 (b) (2) and (3) of this chapter, on the basis of the facts set forth in the application and any additional information available to it, the Civilian Production Administration shall establish a quota for each month, enter such quota on each of the eight copies of the form and distribute them as follows: one copy to the applicant, one copy to the Office of the Housing Expediter, three copies to the Reconstruction Finance Corporation, and three copies to be retained by the CPA.

(2) In accordance with § 805.9 (a) (10) of this chapter, where producers apply for authorization to submit applications for quotas and claims for payment on the basis of a stipulated fiscal month, the CPA shall review the applications on the basis of the facts submitted, together with any additional information available to it, and shall grant such authorization when in the CPA's judgment hardship would otherwise result. The CPA shall notify the applicant, the RFC (in triplicate), and the OHE of the action taken.

(3) In accordance with § 805.9 (a) (5) of this chapter, the CPA shall review applications from producers on the basis

of the facts submitted, together with any additional information available to it, and where the CPA finds that such production or contract was only temporary and caused by unusual conditions, the CPA shall recommend to the OHE that such plant be considered a closed plant. Upon receipt of decision of the OHE, the CPA shall notify the applicant and the RFC (in triplicate) of the action taken by the OHE.

(4) With respect to application by producers for quota adjustments:

(i) In accordance with § 805.9 (b) (1) of this chapter, where the CPA finds on application by a producer with two or more plants that it is his normal operating practice to shift a substantial portion of his production and/or shipments among any of his plants, the CPA may establish a combined quota for such plants and shall notify the applicant, the RFC (in triplicate) and the OHE of the action taken.

(ii) In accordance with § 805.9 (b) (4) of this chapter, where the CPA finds on application by a producer that a plant failed to meet its quota during a claim period because production during that claim period was interrupted due to unusual circumstances beyond the producer's control, the CPA shall recommend to the OHE whether or not the deficit for that period shall be added to the established quota for the succeeding month. Such applications, with recommended quotas, shall be submitted by the CPA to the OHE for approval. The CPA shall forward the approved quota to the applicant, and send three signed copies to the RFC.

(iii) In accordance with § 805.9 (b) (5) of this chapter, where the CPA finds on application by a producer that one or more of his furnaces is shut down for necessary repairs, the CPA shall make such adjustments of quota for the period of the shut down as it deems proper, and shall notify the applicant, the RFC (in triplicate) and the OHE of the action taken.

(iv) In accordance with § 805.9 (b) (6) of this chapter, where the CPA finds on request for quota adjustment by a producer that one or more of his furnaces customarily produced blast furnace products other than merchant pig iron, but that because of unusual or special conditions, such furnaces temporarily produced merchant pig iron during the period on the basis of which the quota was established, the CPA shall on the basis of the facts set forth in the request, together with any additional information available to it, recommend to the OHE a figure to be used as the quota to be assigned the applicant. Such requests, with recommended quotas, shall be submitted by the CPA to the OHE for approval. The CPA shall forward the approved quota to the applicant, and send three signed copies to the RFC.

(5) In accordance with § 805.9 (b) (7) of this chapter, where CPA finds that the production in any plant of a producer with two or more plants falls below the quota for that plant in any month, the CPA shall establish a combined quota for any or all plants of such producer, if upon investigation it determines that production and/or shipments have been shifted among such plants so as to increase the producer's total claim without a corresponding increase in total output, and shall notify the applicant, the RFC (in triplicate) and the OHE of the action taken.

(6) With respect to applications for quotas and to claims for payment, the CPA shall review each application and claim on the basis of the facts submitted therein, together with any additional information available, and:

(i) Where it appears to CPA that immediate investigation or audit of any such application or claim is required, the CPA shall take such action and shall notify the RFC (in triplicate), stating whether or not further payments should be withheld by RFC pending the result of such investigation or audit. In all such cases in which CPA concludes that quotas previously established should be changed or that the amount of the claim should be modified, the CPA shall notify the RFC (in triplicate), and the OHE of any such modifications of a quota or a claim. In those cases in which the quota is changed, the CPA shall notify the applicant of the action taken.

(ii) Where CPA finds no basis for immediate investigation or withholding of payment, the CPA shall notify the RFC (in triplicate), within 30 days of the date that such claim was received by the CPA, of the findings and send a copy of such notification to the OHE.

(7) With respect to § 805.9 (e) (2), of this chapter, the CPA shall receive all copies of Form 14–107 and shall forward two copies to the OHE. If, on the basis of the information contained in the form, the quota and claim and such other information as may be available, the CPA finds that any operating plant or any steel grade pig iron producer is in violation of the provisions of this paragraph, the CPA shall notify the OHE promptly of its findings and recommend action.

(8) With respect to all applications for quota and claims for payment, the CPA shall:

(i) Perform such investigations and post-audits in the field as may appear to be feasible and necessary with respect to all producers of merchant pig iron who participate in the premium payments plan, modifying previous determinations on quotas and claims or, in the case of special quotas, recommending modification to the OHE, where such determinations are consistent with the findings of investigations and post-audits. Such investigations and post-audits shall follow procedures approved by the OHE, shall include questionable cases prior to approval or invalidation, and shall be so scheduled as to cover all participating producers by the end of the sixth month of operation of the plan. A copy of each audit report shall be sent to the OHE. The CPA shall notify the RFC (in triplicate) and the OHE of actions taken as a result of the findings of investigations and post-audits. The CPA shall notify the applicant of any change in quotas established resulting from investigations and post-audits under § 805.9 of this chapter.

(ii) Make such special investigations or audits as may be requested by the OHE.

(iii) Consider complaints by applicants, hold hearings whenever necessary and notify the applicant, and the RFC (in triplicate) of the decisions, and send copies thereof to the OHE. In the event the applicant is still dissatisfied with such decision, the CPA shall notify him that he may appeal to the OHE Appeals Board.

(9) The CPA shall prepare and transmit to the OHE such regular and special reports of operations under § 805.9 of this chapter as may be requested by the OHE.

(10) The CPA shall take all other steps necessary to carry out the responsibilities of the CPA under § 805.9 of this chapter.

(60 Stat. 207)

Issued this 4th day of November 1946.

WILSON W. WYATT,
Housing Expediter.

[F. R. Doc. 46–20126; Filed, Nov. 8, 1946; 8:48 a. m.]

[HED–123–RFC–21]

PART 802—DELEGATIONS OF FINAL AUTHORITY

DIRECTIVE TO RECONSTRUCTION FINANCE CORPORATION WITH RESPECT TO SAND LIME BRICK

§ 802.10 *Directive to the Reconstruction Finance Corporation on Premium Payments Regulation 10 (§ 805.10 of this chapter) with respect to sand lime brick.* This directive assigns to the Reconstruction Finance Corporation responsibilities which are necessary to assure effective administration of Premium Payments Regulation 10, issued October 29, 1946, on sand lime brick (11 F. R. 12783), and in addition it summarizes responsibilities assigned to the RFC by the regulation itself.

(a) Pursuant to the authority vested in me by the Veterans' Emergency Housing Act of 1946, the RFC is hereby authorized and directed to perform the following functions in addition to those assigned to it by the regulation:

(1) The RFC shall review claims for payment or information returns for completeness of entries and for accuracy of computations, and, after making payments as provided for by the regulation, forward three copies of the claim or the information return to the Civilian Production Administration, Building Materials Division, and two copies to the Office of the Housing Expediter, Washington, D. C., Attention: Premium Payments Branch.

(2) The RFC shall furnish to the CPA at its request, serial numbers to be inserted on the application form by the CPA.

(3) The RFC shall notify the producer of any change in the amount of a claim made by the RFC after preliminary review, or by the CPA after further investigation and audit.

(4) The RFC shall act upon advice from the CPA with respect to such authority delegated to the CPA by the Housing Expediter as affect the functions of the RFC in the program.

(5) The RFC shall prepare and transmit to the OHE such regular and special reports of its operations under the regu-

lation and this directive as may be requested by the OHE.

(6) The RFC shall take all other steps necessary to carry out the responsibilities of the RFC under the regulation.

(b) Responsibilities assigned to the RFC by the regulation, together with appropriate reference to related delegations to the CPA, are summarized as follows:

(1) The RFC shall furnish Quota Forms NHA 14–111, Claim Forms NHA 14–112, and Seasonal Adjustment Forms NHA 14–113 to applicants on request, through its Loan Agencies.

(2) The RFC shall receive claims for payment and information returns; and:

(i) Determine whether such claims appear to have been correctly and properly prepared.

(ii) Subject to final verification by the CPA, pay all or any part of a claim accepted by the RFC. If any part of a claim is questionable after review or audit by the CPA, the RFC may:

(*a*) Require that a bond satisfactory in form and amount be furnished by the claimant, or

(*b*) Suspend further payments.

(3) The RFC may require that a bond satisfactory in form and amount be furnished by any claimant for the last two months during which this regulation is in effect.

(4) If the amount verified and approved for payment by the CPA is less than the amount previously paid, or if the claim is invalidated in whole or in part, the RFC shall notify the claimant of the overpayment, or the invalidation, and:

(i) Demand that the claimant refund the overage, or the amount invalidated, plus interest at the rate of 4 percent per annum, or

(ii) Deduct such sum plus interest from any accrued or subsequent claim of the claimant.

(60 Stat. 207)

Issued this 4th day of November 1946.

WILSON W. WYATT,
Housing Expediter.

[F. R. Doc. 46–20124; Filed, Nov. 8, 1946; 8:47 a. m.]

[HED–122–CPA–12]

PART 802—DELEGATIONS OF FINAL AUTHORITY

DIRECTIVE TO CIVILIAN PRODUCTION ADMINISTRATION WITH RESPECT TO SAND-LIME BRICK

§ 802.11 *Directive to the Civilian Production Administration on Premium Payments Regulation 10 (§ 805.10 of this chapter) with respect to sand-lime brick.* This directive assigns responsibilities to the Civilian Production Administration for the administration of Premium Payments Regulation 10, issued October 29, 1946 relating to sand-lime brick (11 F. R. 12783).

(a) Pursuant to the authority vested in me by the Veterans' Emergency Housing Act of 1946, the Civilian Production Administration is hereby authorized and directed to act as my representative in performing the following functions in accordance with the regulation:

(1) (i) Upon receipt of each application for establishment of quota in accordance with § 805.10 (d) (1) of this chapter, on the basis of the facts set forth in the application and any additional information available to it, the CPA shall establish a quota, enter such quota on each of the eight copies of the form and distribute as follows: one copy to the applicant, one copy to the Office of the Housing Expediter, Attention Premium Payments Branch, three copies to the Reconstruction Finance Corporation, and three copies to be retained by the CPA.

(ii) Upon receipt of each application for the relief provided under § 805.10 (c) (3) of this chapter, the CPA shall determine whether the deficit was due to unusual circumstances beyond the control of the producer. If the facts justify such a determination, the CPA shall not add such deficit to the succeeding month's quota and shall notify the applicant, the RFC (in triplicate) and the OHE of the action taken.

(2) With respect to applications for special quotas, including seasonal quotas, in accordance with § 805.10 (c) (1) (iv) and (v) of this chapter, on the basis of the facts set forth in the application and any additional information available to it, the CPA shall recommend to the Office of the Housing Expediter a figure to be used as the quota to be assigned to the applicant. Upon approval of a quota by the OHE, the CPA shall notify the applicant and the RFC (in triplicate) of the action taken.

(3) With respect to any multiple plant producer, in accordance with § 805.10 (c) (2) of this chapter, the CPA shall establish a combined quota for any or all plants of such producer upon determination by the CPA that production has been shifted among plants of such producer so as to increase the producer's total claims without a correspondening increase in total output.

(4) With respect to applications for quotas filed with the CPA pursuant to § 805.10 (d) (1) of this chapter and to applications for claims filed with the RFC pursuant to § 805.10 (f) (1) of this chapter, (copies of which will be forwarded to the CPA) review each application for quota and each claim on the basis of the facts submitted therein, together with any additional information which may be available to the CPA, and

(i) Where it appears to the CPA that immediate investigation or audit of any such application or claim is required, the CPA shall take such action and shall, where it appears necessary, notify the RFC at the time that further payments should be withheld by the RFC pending the result of such investigation or audit. In all cases in which the CPA concludes that the quota should be changed or the amount of the claim modified, the CPA shall make such change in the quota or in the amount of the claim and shall notify the applicant, the RFC (in triplicate), and the OHE of any such modification of a quota or of a claim.

(ii) Where the CPA finds no basis for immediate investigation or withholding of payment, the CPA shall notify the RFC of the findings and send a copy of such notification to the OHE.

(5) With respect to applications from producers for authorizations to submit applications for quotas and claims for payments on the basis of a stipulated fiscal month, in accordance with § 805.10 (a) (8) of this chapter, the CPA shall review the applications on the basis of the facts submitted, together with any additional information available, and shall grant such authorizations when in its judgment hardship would otherwise result. The CPA shall notify the applicant, the RFC (in triplicate), the OHE of the action taken.

(6) With respect to all applications for quota and claims for payment, the CPA shall:

(i) Perform such investigations and post-audits in the field as may appear to be feasible and necessary with respect to all producers of sand lime brick who participate in the premium payments plan, modifying previous determinations on quotas and claims or, in the case of special quotas, recommending modification to the OHE, where such determinations are consistent with the findings of investigations and post-audits. Such investigations and post-audits shall follow procedures approved by the OHE, shall include questionable cases prior to approval or invalidation, and shall be so scheduled as to cover all participating producers by the end of the sixth month of operation of the plan. A copy of each audit report shall be sent to the OHE. The CPA shall notify the RFC (in triplicate) and the OHE of actions taken as a result of the findings of investigations and post-audits. The CPA shall notify the applicant of any change in established quotas resulting from investigations and post-audits under this paragraph.

(ii) Make such special investigations or audits as may be requested by the OHE.

(iii) Consider complaints by applicants, hold hearings whenever necessary and notify the applicant, and the RFC (in triplicate) of the decisions, sending copies of such notification to the OHE. In the event the applicant is still dissatisfied with such decisions, the CPA shall notify him that he may appeal to the OHE Appeals Board.

(7) Prepare and transmit to the OHE such regular and special reports of operations under the regulation and this directive as may be requested by the OHE.

(8) Take all other steps necessary to carry out the responsibilities of the CPA under this section.

(60 Stat. 207)

Issued this 4th day of November 1946.

WILSON W. WYATT,
Housing Expediter.

[F. R. Doc. 46–20123; Filed, Nov. 8, 1946; 8:47 a. m.]

[HED–118–OPA–8]

PART 804—DIRECTIVES

DIRECTIVE TO OFFICE OF PRICE ADMINISTRATION ON WESTERN SOFTWOOD STAINED SHINGLES

§ 804.1 *Directive to the Office of Price Administration on western softwood*

stained shingles. (a) Pursuant to the authority vested in me by the Veterans' Emergency Housing Act of 1946, the Office of Price Administration is hereby authorized and directed to exercise its powers and authority in order to expedite the production of western softwood stained shingles, as follows:

(1) Amend Second Revised MPR–164, effective November 7, 1946, so that the increase in ceiling prices granted to manufacturers of western softwood shingles on September 23, 1946, shall be granted to the same extent to the manufacturers of stained shingles and shakes priced in that regulation, thus allowing a pass-through in its entirety of the September 23, 1946, price increase. This increase in ceiling price of stained shingles shall be effective for a period of sixty days after the effective date of this amendment of MPR 164.

(56 Stat. 23, 60 Stat. 207; 50 U. S. C. App. Sup. 901 et seq.)

Effective this 4th day of November 1946.

[SEAL] WILSON W. WYATT,
Housing Expediter.

[F. R. Doc. 46–20165; Filed, Nov. 8, 1946; 8:46 a. m.]

TITLE 32—NATIONAL DEFENSE

Chapter VI—Selective Service System

[Local Board Memorandum No. 77f, Issued 5/26/45]

PART 671—LOCAL BOARD MEMORANDA

Pursuant to the provisions of the Administrative Procedures Act, the following directive issued under authority of the Selective Training and Service Act of 1940, as amended, is hereby made a matter of record:

Local Board Memorandum No. 77f, dated 5/26/45, § 671.77f—*Induction of certain registrants under 26 years of age not qualified for general military service* is no longer necessary, since its purpose has been served and that memorandum is hereby discontinued.

LOUIS B. HERSHEY,
Director.

[F R. Doc. 46–20164; Filed, Nov. 8, 1946; 8:45 a. m.]

Chapter IX—Civilian Production Administration

DELEGATION OF AUTHORITY BY OFFICE OF HOUSING EXPEDITER WITH RESPECT TO MERCHANT PIG IRON AND SAND LIME BRICK

CROSS REFERENCE: For directives by the Office of the Housing Expediter delegating authority to the Civilian Production Administration with respect to Premium Payments Regulation 9 (merchant pig iron) and Premium Payments Regulation 10 (sand-lime brick), see F. R. Documents 46–20126 and 46–20123, Title 24, Chapter VIII, Part 802, *supra.*

Chapter XI—Office of Price Administration

DIRECTIVE TO OFFICE OF PRICE ADMINISTRATION WITH RESPECT TO WESTERN SOFTWOOD STAINED SHINGLES

CROSS REFERENCE: For a directive to the Office of Price Administration with respect to western softwood stained shingles from the Office of Housing Expediter, see Part 804, Title 24, *supra.*

Chapter XVI—Price Decontrol Board

PART 1821—NOTIFICATIONS TO PRICE ADMINISTRATOR OF CONSENT TO REESTABLISHMENT OF MAXIMUM PRICES

COPPER ALLOY FITTINGS

The Price Decontrol Board, acting under authority contained in section 1A (d) (3) of the Emergency Price Control Act of 1942, as amended, consents to the reestablishment of maximum prices as indicated in § 1821.3 below. This consent is granted in order to permit the Office of Price Administration to correct an error in its Amendment 56 to Supplementary Order 129, and thereby to carry out the intent of that decontrol action.

This notification of consent will be filed with the Division of the Federal Register by the Office of Price Administration on or before the date on which the prices are reestablished upon commodities included under this notification.

§ 1821.3 *Copper alloy fittings.* The Price Decontrol Board hereby consents to the reestablishment of maximum prices upon the copper alloy fittings for which maximum prices will be reestablished, if the term "copper alloy fittings" used in Item 11 of section 10 (b) (6) in the Office of Price Administration's Supplementary Order No. 129 is changed to "Copper-Nickel Alloy Fittings." If, and to the extent that, maximum prices upon these commodities are not reestablished on or before December 15, 1946, the consent contained herein shall expire.

(Pub. Law 548, 79th Cong.)

Issued on this 30th day of October 1946.

By the Price Decontrol Board.

ROY L. THOMPSON,
Chairman.

[F. R. Doc. 46–20129; Filed, Nov. 8, 1946; 8:45 a. m.]

Chapter XVIII—Office of Economic Stabilization, Office of War Mobilization and Reconversion

[Directive 138]

PART 4003—SUBSIDIES: SUPPORT PRICES

1947 SUGAR BEET PRICE SUPPORT PROGRAM

§ 4003.4b *Sugar beets, 1947 crop.* The Acting Secretary of Agriculture has, by letter dated October 1, 1946, and by supplementing documents, submitted certain information and recommendations to me with respect to proposed contracts concerning the Commodity Credit Corporation and the processors of sugar beets in the United States under which Commodity Credit Corporation would reimburse processors of 1947-crop sugar beets to the extent that a weighted average sea-board basis price for refined cane sugar for the 1947 crop marketing year for beet sugar is less than $8.10 per 100 pounds. This is considered to be the equivalent to an $8.00 per 100 pounds basis market price for beet sugar. The proposed contract will also contain a provision designed to give best processors an opportunity to sell beet sugar on a price basis comparable to the price of Cuban sugar, c. i. f., or to obtain equivalent benefits. Such processors will guarantee to pay a price per ton for 1947-crop sugar beets equivalent to a national average of $14.50 per ton.

After careful consideration, I hereby find that the proposed program is necessary to insure the maximum necessary production and distribution of domestic beet sugar from the 1947 crop of sugar beets.

The Department of Agriculture is authorized and directed to carry out through the Commodity Credit Corporation the price support program for the 1947 crop of domestic sugar beets as described herein (and as described in detail in the letter from the Acting Secretary of Agriculture and the supplementing documents) to the extent that such program involves the payment of subsidies within the meaning of that term as used in the Emergency Price Control Act, as amended, and the Price Control Extension Act of 1946.

(56 Stat. 765; 58 Stat. 632, 642, 784; 59 Stat. 306; Pub. Law 548, 79th Cong.; 15 U. S. C. Sup. 713a–8, 713a–8 note, 50 U. S. C. Sup. App. 901–903, 921–925, 961–971; E. O. 9250, October 3, 1942, E. O. 9328, April 8, 1943, E. O. 9599, August 18, 1945, E. O. 9651, October 30, 1945, E. O. 9697, February 14, 1946, E. O. 9699, February 21, 1946, E. O. 9762, July 25, 1946, 7 F. R. 7871, 8 F. R. 4681, 10 F. R. 10155, 13487, 11 F. R. 1691, 1929, 8073)

Issued and effective this 6th day of November 1946.

JOHN R. STEELMAN,
Director of War Mobilization and Reconversion, Director of Economic Stabilization.

[F. R. Doc. 46–20159; Filed, Nov. 8, 1946; 8:46 a. m.]

[Directive 143]

PART 4003—SUBSIDIES: SUPPORT PRICES

PURCHASE AND PRICE SUPPORT PROGRAMS FOR DOMESTIC OFFSHORE RAW CANE SUGAR

§ 4003.42 *Purchase and price support programs for domestic offshore raw cane sugar.* (a) The Secretary of Agriculture has, by letter and enclosure, dated October 18, 1946, submitted certain information and recommended proposed programs as follows:

(1) Purchase of 1947-crop Puerto Rican and Virgin Islands raw cane

sugar at 3.675 cents per pound, f. a. s. Puerto Rican ports and f. o. b. Virgin Islands ports, plus an estimated .80 cent per pound based upon an increase in food price indices published by the Bureau of Labor Statistics, U. S. Department of Labor, plus a differential historically applied to Puerto Rico and the Virgin Islands of approximately .81 cent per pound. Establishment of the final base price will depend upon the food price indices for the last six months of the calendar year 1946 or increases in the New York ceiling or market price.

(2) Payment of support prices to Hawaiian producers of 1947-crop raw cane sugar to effect a return for such producers substantially the same as that for Puerto Rican and Virgin Islands producers.

(3) Adjustment of purchase price of 1946-crop Puerto Rican and Virgin Islands raw cane sugar and adjustment of price support payment on 1946-crop Hawaiian raw cane sugar of approximately .80 cent per pound on one-half of the total deliveries of the 1946 crop from these areas minus certain transportation adjustments.

(4) Authorization for increased expenditures under Hawaiian transportation cost program due to increased freight rates.

The 1947-crop programs contemplate the sale at the U. S. ceiling price of the Puerto Rican and Virgin Islands sugar by Commodity Credit Corporation and of the Hawaiian sugar by the Hawaiian producers. In addition to the amount of the Hawaiian price support payment and ocean freight on the Hawaiian sugar, Commodity Credit Corporation will absorb certain freight, insurance and handling charges on the Puerto Rican and Virgin Islands sugar as well as any losses in the sale of the Puerto Rican and Virgin Islands sugar. The proposed programs wil result in a prospective loss to Commodity Credit Corporation of $20,300,000.

I hereby find that the proposed programs are necessary to effectuate the policy established by Executive Order 9250 and 9328 and specifically to insure price stability and the maximum necessary distribution of sugar to meet military and civilian requirements.

Accordingly, the Department of Agriculture is hereby authorized and directed to carry out through the Commodity Credit Corporation the program referred to above.

This directive is in addition to, and not in substitution of, the directives of July 30, 1945, July 31, 1945, March 15, 1946, and May 2, 1946, with respect to the 1946-crop features of the proposed program.

(56 Stat. 765; 58 Stat. 632, 642, 784; 59 Stat. 306; 15 U. S. C. 713a–8; 715a–8 note, 50 U. S. C. App. 901–903, 921–925, 961–971; Pub. Law 548, 79th Cong.; E. O. 9250, October 3, 1942, E. O. 9328, April, 8, 1943, E. O. 9599, August 18, 1945, E. O. 9651, October 30, 1945, E. O. 9697, February 14, 1946, E. O. 9699, February 21, 1946, E. O. 9762, July 25, 1946; 7 F. R. 7871, 8 F. R. 4681, 10 F. R. 10155, 13487, 11 F. R. 1691, 1929, 8073).

Issued and effective this 6th day of November 1946.

JOHN R. STEELMAN,
Director of War Mobilization and Reconversion, Director of Economic Stabilization.

[F. R. Doc. 46–20160; Filed, Nov. 8, 1946; 8:46 a. m.]

Chapter XXIV—Department of State (Disposal of Surplus Property)

PART 8501—DISPOSITION OF SURPLUS PROPERTY LOCATED IN THE PACIFIC INSULAR POSSESSIONS

CROSS REFERENCE: For the regulation superseding Part 8501, see Part 8508 of this chapter, *infra*.

[FLC Reg. 8]

PART 8508—DISPOSAL OF SURPLUS PROPERTY LOCATED IN FOREIGN AREAS

Surplus Property Administration Regulation 8 of January 3, 1946 (11 F. R. 350, 2774, 3103), formerly appearing as Part 8308, and by Order 6 of July 18, 1946 as amended September 18, 1946 (Departmental Regulation 108.22; 11 F. R. 10709) redesignated as Part 8508, is hereby revised to read as set forth hereunder. Order 2 of January 3, 1946 (11 F. R. 353), Order 4 of January 3, 1946 (11 F. R. 353), Order 5 of January 8, 1946 (11 F. R. 560), and Order 6 of July 18, 1946, all issued under the authority of FLC Reg. 8 (SPA Reg. 8), remain in effect under this part. 32 CFR, Parts 8308 and 8501 (Departmental Regulations 108.5, 108.7, and 108.23; 11 F. R. 2774, 3103, and 11305), are hereby superseded.

Sec.

AUTHORITY: §§ 8508.1 to 8508.20, inclusive, issued under 58 Stat. 765, 59 Stat. 533 Pub. Law. 375, 584, 79th Cong., (60 Stat. 168); 50 U. S. C. App. Sup. 1611.

§ 8508.1 *Definitions*—(a) *Terms defined in act.* Terms not defined in paragraph (b) of this section which are defined in the Surplus Property Act of 1944 shall in this part have the meaning given to them in the act.

(b) *Other terms.* (1) "Foreign area" means any area outside of the continental United States, Hawaii, Alaska (including the Aleutian Islands), Puerto Rico, and the Virgin Islands. For the purpose of administering the Surplus Property Act and the regulations of the Secretary of State, the Panama Canal Zone, the Philippine Islands and all military bases leased to the United States by foreign governments shall be considered foreign areas.

(2) "Pacific insular possessions" means island possessions of the United States located in the Pacific area but does not include the territory of Hawaii, the Aleutian Islands, or other insular possessions constituting part of or contiguous to the territory of Alaska, the Philippine Islands, or the leased military bases.

(3) "Government agency" means any executive department, independent establishment, board, bureau, commission or other agency of the Federal Government, or any corporation wholly owned (either directly or through one or more corporations) by the United States.

(4) "Nonprofit institution" means any nonprofit scientific, literary, educational, public health, public welfare, charitable, or eleemosynary institution, any hospital or similar institution, organization or association (i) which is organized under the laws of the United States or of any State, territory or possession thereof, and (ii) which is directly supported in whole or in part through use of funds derived from taxation by the United States, its territories or possessions or by a State or political subdivision thereof, or which is exempt from taxation under section 101 (6) of the Internal Revenue Code.

§ 8508.2 *Scope.* This part governs the disposal of surplus property, both real and personal, located in foreign areas.

§ 8508.3 *Designation of disposal agency.* The Office of the Foreign Liquidation Commissioner is designated as the disposal agency for all surplus property located in foreign areas: *Provided, however,* That no declaration of surplus involving a vessel of more than 1,500 gross tons (other than landing craft or landing ships) shall be filed with the Office of the Foreign Liquidation Commissioner unless the owning agency has advised the Maritime Commission that the vessel is to be declared surplus to the Office of the Foreign Liquidation Commissioner for disposal in foreign areas and the Maritime Commission either (a) has consented to such procedure or (b) has not objected to such procedure within 15 days following the submission to the Maritime Commission of such advice.

§ 8508.4 *Delegation of authority.* The Foreign Liquidation Commissioner may delegate his authority for disposal of surplus property to a Government agency or to a person under the complete control of a Government agency.

§ 8508.5 *Active theaters of military operations.* Nothing herein limits or affects the authority of commanders in

active theaters of military operations with respect to property in their control.

§ 8508.6 *Declarations of surplus property*—(a) *Where filed.* Declarations to the Office of the Foreign Liquidation Commissioner of surplus real and personal property located in foreign areas shall be filed as directed by the Foreign Liquidation Commissioner.

(b) *Limitations on power of disposal.* Declarations of surplus property shall fully set forth any legal or contractual restrictions, known to the owning agency, upon authority of the Government to dispose of the property covered by the declaration. To the extent that such information is furnished directly by owning agencies to the Office of the Foreign Liquidation Commissioner, it may be omitted from the declarations of surplus. It shall be the duty of owning agencies to keep their field representatives fully informed as to all such information which is to be included in declarations of surplus. It shall similarly be the duty of the Office of the Foreign Liquidation Commissioner and of any person acting under delegated authority to keep its field representatives and any person to whom the Foreign Liquidation Commissioner has delegated disposal authority fully informed as to all such information received directly from the owning agencies.

(c) *Red Cross property.* Declarations of surplus personal property shall designate any such property known to have been processed, produced or donated by the American Red Cross.

(d) *Withdrawals.* With the consent of the Office of the Foreign Liquidation Commissioner, an owning agency may withdraw property which it has declared surplus and for which a declaration has been transmitted to the Office of the Foreign Liquidation Commissioner pursuant to this part.

§ 8508.7 *Exemptions from Surplus Property Act.* In accordance with section 32 (b) of the act, as amended, and pending further determinations and regulations or orders of the Secretary of State, the Secretary of State hereby exempts disposition of property located in foreign areas from the following provisions of the act:

(a) Section 10 (b) "Designation of disposal agencies."

(b) Section 11 (b) insofar as it requires owning agencies to report surplus property to the Secretary of State and the last sentence of section 11 (g) insofar as it requires disposal agencies to make information in its records available to foreign nationals or foreign governments.

(c) Section 12, "Utilization of Surplus Property by Federal Agencies, except subsection (d).

(d) Section 13, subsections (a), (c), (d), (e), and (f), "Disposal to Local Governments and Nonprofit Institutions."

(e) The proviso in section 15 (a) limiting to three years the period for which credit may be extended on sale of certain types of property.

(f) Section 16, "Dispositions to Veterans."

(g) Section 17, "Dispositions in Rural Areas."

(h) Section 18, "Small Business."

(i) Section 20, "Applicability of Antitrust Laws," insofar as it requires disposal agencies to notify the Attorney General: *Provided, however,* That this exemption shall not apply with respect to plants, pipe lines, and other installations which cost the Government $1,000,000 or more, and patents, processes, techniques or inventions, irrespective of cost.

(j) Section 23, "Disposal of Surplus Real Property."

(k) Section 36, "Termination Inventories."

§ 8508.8 *Utilization of surplus property by Federal agencies.* It shall be the responsibility of all Government agencies having any requirements in foreign areas to consult the records of surplus property established by the Office of the Foreign Liquidation Commissioner to determine whether their requirements can be satisfied out of surplus property.

§ 8508.9 *Donations.* The Office of the Foreign Liquidation Commissioner may make donations pursuant to section 13 (b) of the act whenever it finds that surplus property has no commercial value or that the cost of its care and handling and disposition would exceed the estimated proceeds: *Provided, however,* That the Office of the Foreign Liquidation Commissioner makes and retains a record of its findings justifying the donation, together with any supporting data. Such donations may be made to foreign nonprofit education or charitable organizations but preference shall be given to nonprofit institutions as defined in § 8508.1. In making donations of surplus property which was processed, produced or donated by the American Red Cross, the provisions of section 11 (f) of the act shall be observed.

§ 8508.10 *Destruction or abandonment.* Any surplus property and any waste, salvage or scrap located in foreign areas may be destroyed or abandoned by an owning agency or by the Office of the Foreign Liquidation Commissioner without any notice of the proposed destruction: (a) when the destruction or abandonment is required by military necessity, safety, or considerations of health or security; or (b) whenever it is determined by the Office of the Foreign Liquidation Commissioner that the property has no commercial value, or that the cost of its care, handling and disposition would exceed the estimated proceeds. Any agency authorizing destruction or abandonment under paragraph (a) of this section shall make and retain a record of the surplus property destroyed and the reasons therefor. The Office of the Foreign Liquidation Commissioner should not authorize or consent to the abandonment or destruction of surplus property under paragraph (b) of this section without exploring the possibilities of making a donation under § 8508.9. Any agency authorizing destruction or abandonment under paragraph (b) of this section shall make and retain a record of its findings justifying such action.

§ 8508.11 *Disposal of certain plants, facilities and equipment under section 19 (c) of the act.* Surplus aircraft plants and facilities, aircraft and aircraft parts, shipyards and facilities, transportation facilities, and radio and electrical equipment, located in foreign areas, may, in accordance with section 19 (c) of the act, be disposed of without prior submission to the Congress.

§ 8508.12 *Aircraft and property peculiar thereto.* Pending further regulations or orders of the Secretary of State, surplus aircraft and property peculiar to aircraft located in foreign areas shall be disposed of only in accordance with existing procedures except that donations of such property may be made pursuant to § 8508.9.

§ 8508.13 *Plants, pipe lines or other installations costing $1,000,000 or more.* Whenever the Office of the Foreign Liquidation Commissioner shall begin negotiations for the disposition of any plants, pipe lines, or other installations, located in foreign areas, which cost the Government $1,000,000 or more, the Office of the Foreign Liquidation Commissioner shall promptly notify the Attorney General.

§ 8508.14 *Food and agricultural commodities.* Disposals of surplus agricultural commodities, surplus foods processed from agricultural commodities, and surplus cotton or woolen goods remain subject to the provisions of section 21 (a) and (b) of the act, and subject to such policies as may be formulated and issued pursuant thereto.

§ 8508.15 *Importations into the United States.* Surplus property which has been sold in foreign areas shall not be imported into the United States in the same or substantially the same form in which it was exported from the United States if such property was originally produced in the United States and is readily identifiable as such, except to the extent that the Secretary of State specifically authorizes such importation by order issued hereunder;[1] *Provided, however,* That such property may be imported (a) on consignment to a person or firm in the United States for the purpose of reconditioning for re-export or (b) by a veteran (including a member of the armed forces) if brought in for his personal use, and upon certification by the importer to the Treasury Department that the importation is being made for one of such purposes; *Provided further,* That for the purpose of this section, foreign areas shall not include Guam or other Pacific insular possessions. Nothing in this section shall prevent surplus property which is owned by a Government agency from being brought into the continental United States, its territories or possessions.

§ 8508.16 *Disposal policies*—(a) *Price policy.* The governing price policy shall

[1] The Secretary of State, upon the request of the Director of War Mobilization and Reconversion, has exempted from the prohibition of this section certain property found by the Director of War Mobilization and Reconversion to be needed for reconversion in the United States. The items exempted are listed in Schedule A of Order 6 under this part, September 18, 1946 (11 F. R. 10709).

be to obtain for the Government, as nearly as possible, the fair value of surplus property on its disposition.

(b) *Purchasers*—(1) *Government agencies.* Transfer of surplus property to Government agencies for their use in foreign areas shall be given priorty over all other disposals.

(2) *Other than Government agencies.* The Office of the Foreign Liquidation Commissioner may establish such order of priorities among persons other than Government agencies as they may deem appropriate in the respective foreign areas, but shall, to such extent and in such order of priority as they may deem feasible, afford the following persons appropriate opportunity to purchase surplus property:

(i) Veterans, including members of the armed forces.

(ii) The following institutions, for use in foreign areas: (*a*) nonprofit institutions as defined in § 8508.1, and (*b*) nonprofit educational and charitable institutions organized under the laws of a foreign country which are directly supported in whole or in part through use of funds derived from taxation by the United States, its territories or possessions or which are certified by the appropriate diplomatic mission as being supported in whole or in part from funds derived from the United States.

(iii) American manufacturers or distributors, with regard to surplus property bearing their name or trade-mark, for use or disposal in foreign areas or for importation into the United States for the purpose of reconditioning for reexport.

(iv) Foreign governments for the areas in which the surplus property is located.

Although the Office of the Foreign Liquidation Commissioner should make reasonable efforts to apprise such persons of any opportunity afforded them to purchase surplus property, it shall be the primary responsibility of such persons to make their requirements known to the Office of the Foreign Liquidation Commissioner.

(c) *Consideration in general.* Surplus property may be disposed of for cash, credit, other property, for foreign currencies or credits, substantial benefits or the discharge of claims.

(d) *Money payments*—(1) *Government agencies.* Transfers to Government agencies shall be made at the fair value of the property as fixed by the Office of the Foreign Liquidation Commissioner and payment shall be made by transfer of United States dollar funds or by reduction of appropriation unless transfer without reimbursement or transfer of funds is otherwise authorized by law.

(2) *Other than Government agencies.* (i) Money payments for surplus property located in foreign areas shall be made in dollars, either in cash or on credit terms, unless specific authorization to accept local currencies has been given by the Treasury Department prior to January 15, 1946, or unless payment is made as provided in subdivision (ii) of this subparagraph. It shall be the responsibility of the Office of the Foreign Liquidation Commissioner to obtain as large an immediate payment in dollars as possible, insofar as this can be done without unduly reducing the total proceeds and, where dollar credit is required, the Office of the Foreign Liquidation Commissioner shall determine the terms under which it will be extended. Any authorization to accept foreign currencies made by the Treasury Department prior to January 15, 1946 shall continue in effect until changed by the Office of the Foreign Liquidation Commissioner.

(ii) Where it appears to the Office of the Foreign Liquidation Commissioner that adherence to the policy of obtaining immediate or deferred payment in dollars, or of accepting foreign currencies only in accordance with the specific authorization as set forth in subdivision (i) of this subparagraph, is likely to cause costly delay in the disposal of surplus property, the Office of the Foreign Liquidation Commissioner may accept foreign currencies, with or without exchange guarantees or conversion agreements, in such amounts and under such conditions as are deemed appropriate by the Office of the Foreign Liquidation Commissioner, in consultation with the Treasury Department. An estimate of the value, expressed in dollars, of such foreign currencies shall be inserted in the final official record of these sales of surplus goods. Such acceptance of foreign currencies is authorized only for the purpose of disposing of surplus property which at the time of sale is in the general area where the sale is made, and, wherever practicable, an effort should be made to obtain appropriate exchange guarantees and conversion agreements.

(iii) Nothing in this section shall be deemed to affect the procedures to be established by the Secretary of the Treasury with regard to the administration of foreign currencies or credits acquired by the Office of the Foreign Liquidation Commissioner.

(e) *Disposition for other considerations*—(1) *Disposal of surplus property for claims.* Any claim against the Government of the United States, which any U. S. Government agency is legally authorized to settle or compromise, may be discharged by disposal of surplus property upon certification by such agency of the amount due in settlement or compromise thereof. Whenever appropriated funds are available for the settlement or compromise of such claims, reimbursement from such appropriation will be required in the amount so certified.

(2) *Disposal of surplus property for other property, property rights or substantial benefits.* Surplus property may be exchanged for other property, real or personal, tangible or intangible, or for other substantial benefits, where this course of action is determined by the Office of the Foreign Liquidation Commissioner to be in the best interests of the Government of the United States. The property, rights, or benefits thus acquired may be disposed of by sale or by transfers authorized by law, including transfers to Government agencies authorized to acquire such property and having appropriations which can be charged with the value of the property so transferred. Where surplus property is exchanged for property, rights or benefits which are not appropriate for sale or transfer, the Department of State will be the custodian of the documents evidencing such property, rights or benefits and will be charged with the responsibility for any governmental negotiations incident to the protection, enforcement or continuance of such property, rights or benefits.

(f) *Customs duties and taxes.* When making any agreements with foreign governments relating to the disposal of surplus property, the Office of the Foreign Liquidation Commissioner shall, where necessary, seek appropriate arrangements with foreign governments to assure that no customs duties, taxes or other similar charges are levied upon sales of surplus property which are discriminatory or prevent the sale of surpluses at fair prices to the United States Government; and that no duties, taxes or similar charges will be levied upon surplus property prior to its sale by the Office of the Foreign Liquidation Commissioner or upon sales for export from country of sale. Where surplus property is to be disposed of without any agreement between the Office of the Foreign Liquidation Commissioner and a foreign government, the Department of State or its foreign diplomatic or consular missions shall negotiate, where necessary, such arrangements with the foreign government.

§ 8508.17 *Care and handling.* Owning agencies shall continue to be responsible for care and handling of surplus property located in foreign areas and for such other surplus property as may come into their possession. The War and Navy Departments shall assume responsibility for care and handling of property declared surplus by owning agencies whose activities in foreign areas are discontinued.

§ 8508.18 *Contractor inventories.* Owning agencies are empowered to authorize any contractor with such agency or any subcontractor thereunder to retain or to dispose of contractor inventories located in foreign areas at the fair value thereof. In making any such authorization, owning agencies shall consult with the Office of the Foreign Liquidation Commissioner and shall obtain the approval of the Treasury Department as to the currencies to be accepted and the conditions of payment unless payment is made as a credit to the price or cost of work under the contract.

§ 8508.19 *Inconsistent regulations.* Regulations heretofore applicable to the disposal of surplus property located in foreign areas as defined in § 8508.1 are hereby superseded for those areas.

§ 8508.20 *Persons acting under delegated authority.* Any reference in this part to the Office of the Foreign Liquidation Commissioner shall be deemed to include any person acting under delegated authority of the Foreign Liquidation Commissioner or under any redelegation of such authority.

This revision of this part shall become effective when published in the FEDERAL REGISTER.

[SEAL] JAMES F. BYRNES,
Secretary of State.

OCTOBER 30, 1946.

[F. R. Doc. 46-20122; Filed, Nov. 8, 1946; 8:56 a. m.]

TITLE 47—TELECOMMUNICATION

Chapter I—Federal Communications Commission

[Order 110-D]

PART 3—RULES GOVERNING RADIO BROADCAST STATIONS

TERMINATION OF LICENSES FOR INTERNATIONAL BROADCAST STATIONS

NOTE: In Federal Register Document 46-19195, appearing on page 12573 of the issue for Friday, October 25, 1946, the part headnote was corrected to read as set forth above by letter from the Federal Communications Commission, dated November 4, 1946.

TITLE 49—TRANSPORTATION AND RAILROADS

Chapter I—Interstate Commerce Commission

[S. O. 639]

PART 95—CAR SERVICE

CHRISTMAS TREES IN OPEN TOP CARS

At a session of the Interstate Commerce Commission, Division 3, held at its office in Washington, D. C., on the 5th day of November A. D. 1946.

It appearing, that there is a shortage of box cars and certain tariffs require that Christmas trees be shipped in box cars only, thus aggravating the shortage of such cars; in the opinion of the Commission an emergency exists in all sections of the country requiring immediate action: it is ordered, that:

§ 95.639 *Christmas trees in open top cars.* (a) Any common carrier by railroad subject to the Interstate Commerce Act may, at its option furnish and transport open top cars loaded with Christmas trees.

(b) *Tariff provisions suspended—announcement required.* The operation of all tariff rules or regulations insofar as they conflict with the provisions of this order is hereby suspended, and each railroad subject to this order, or its agent, shall publish, file, and post a supplement to each of its tariffs affected hereby, in substantial accordance with the provisions of rule 9 (k) of the Commission's Tariff Circular No. 20 (§ 141.9 (k) of this chapter) announcing such suspension.

(c) *Effective date.* This order shall become effective at 12:01 a. m., November 6, 1946.

(d) *Expiration date.* This order shall expire at 11:59 p. m., January 10, 1947, unless otherwise modified, changed, suspended, or annulled by order of this Commission.

It is further ordered, that a copy of this order and direction be served upon each State railroad regulatory body, and upon the Association of American Railroads, Car Service Division, as agent of the railroads subscribing to the car service and per diem agreement under the terms of that agreement; and that notice of this order be given to the general public by depositing a copy in the office of the Secretary of the Commission at Washington, D. C., and by filing it with the Director, Division of the Federal Register.

(40 Stat. 101, sec. 402; 41 Stat. 476, sec. 4; 54 Stat. 901; 49 U. S. C. 7 (10)-(17))

By the Commission, Division 3.

[SEAL] W. P. BARTEL,
Secretary.

[F. R. Doc. 46—20130; Filed, Nov. 8, 1946; 8:47 a. m.]

Chapter II—Office of Defense Transportation

[Gen. Order ODT 16C, Rev.]

PART 502—DIRECTION OF TRAFFIC MOVEMENT

FREIGHT SHIPMENTS TO OR WITHIN PORT AREAS

General outline. This General Order ODT 16C, Revised, is a revision of and supersedes General Order ODT 16C.

With certain exceptions, this General Order ODT 16C, Revised, prohibits the transportation by rail of carload shipments of overseas freight to or within any port area named in Appendix A of the order, for storage within such port area or for delivery to an ocean carrier at such port area without a special permit. Excepted from the prohibition of the order, under conditions stated therein, are shipments of grains, soybeans, flaxseed, malt, petroleum, petroleum products, livestock, live poultry, and shipments for the armed forces. Other exceptions are made by means of general permits.

This order removes the general exceptions heretofore favoring Government shipments (except shipments to the armed forces), so that all shipments, whether commercial or Government, are subject to similar limitations and exceptions.

The term "export freight" is omitted as is the general exception applying to coal and coke. A definition of "steamship contract or booking" is added for clarity. A new provision with respect to permits has also been added.

This general outline shall not be construed to alter the meaning of any provision contained in the order.

The text of General Order ODT 16C, Revised, follows:

Pursuant to Title III of the Second War Powers Act, 1942, as amended, Executive Order 8989, as amended, and Executive Order 9729, in order to make available through more efficient use railway cars and other transportation facilities and equipment for transportation of material of war and for the prompt and continuous movement of traffic; to alleviate shortages of equipment necessary for such transportation; to assure the orderly and expeditious movement of materials and supplies of war; to coordinate domestic traffic movements with ocean shipping in order to avoid terminal congestion at port areas in the United States, the attainment of which purposes is essential to the war effort, and it being deemed necessary in the public interest and to promote the national defense, by reason of the short supply of railway cars and other railway transportation equipment and facilities, to allocate the use of such cars and other railway transportation equipment and facilities, *It is hereby ordered,* That General Order ODT 16C (10 F. R. 12855) be, and it is hereby, revised to read as follows:

Sec.
502.200 Definitions.
502.201 Applicability.
502.202 Shipment of overseas freight to or within port areas.
502.203 Special permits; issuance; review; special permit agents.
502.204 Communications.

AUTHORITY: §§ 502.200 to 502.204, inclusive, issued under 54 Stat. 676, 56 Stat. 177, 58 Stat. 827, 59 Stat. 658, Public Law 475, 79th Congress, 60 Stat. 345; 50 U. S. C. App. 633, 645, 1152; E. O. 8989, Dec. 18, 1941, as amended by E. O. 9389, Oct. 18, 1943; E. O. 9729, May 23, 1946; 6 F. R. 6725, 8 F. R. 14183; 11 F. R. 5641.

§ 502.200 *Definitions.* As used in §§ 502.200 to 500.204, inclusive, or in any order, permit, or regulation issued hereunder, the term:

(a) "Person" means any individual, partnership, corporation, association, joint-stock company, business trust, or other organized group of persons, or any trustee, receiver, assignee, or personal representative, and includes any department or agency of the United States, any State, the District of Columbia, or any other political governmental or legal entity;

(b) "Overseas freight" means any carload shipment intended for movement offshore by water from a port or place in the continental United States to a port or place outside thereof;

(c) "Commercial freight" means any overseas freight not shipped by or to a Government agency or on a United States Government bill of lading;

(d) "Government agency" means any agency or department of the United States, including any corporation owned or controlled by the United States;

(e) "Public warehouse" means a warehouse or other place of storage the operator of which is engaged as a warehouseman in the business of storing goods therein for compensation;

(f) "Carload shipment" means a shipment of property moving by rail (1) in a quantity weighing 20,000 pounds or more, or (2) in a quantity weighing less than 20,000 pounds, when transported by rail at a carload rate or rates and exclusively occupying a railway car from point of origin;

(g) "Port area" means any port or place shown in Appendix A of this order,

and includes both the switching and lighterage limits of each such port or place;

(h) "Continental United States" means the forty-eight States and the District of Columbia;

(i) "Steamship contract or booking" means any contract, certification or other similar document signed or issued by a duly authorized representative of a steamship company and evidencing reservation of cargo space on a vessel scheduled to move on a specific voyage;

(j) "General permit" means a permit issued by the Director of the Office of Defense Transportation relieving, under conditions stated therein, a class of persons or shipments from compliance with one or more provisions of §§ 502.200 to 502.204, inclusive, or any amendment thereof;

(k) "Special permit" means a permit issued under and in accordance with the provisions of §§ 502.200 to 502.204, inclusive, to a person named therein, authorizing the offer, acceptance, and transportation of one or more shipments of overseas freight to or within a named port area for storage or delivery to an ocean carrier therein.

§ 502.201 *Applicability.* Sections 502.200 to 502.204, inclusive, are applicable only within the continental United States.

§ 502.202 *Shipment of overseas freight to or within port areas.* No person shall offer to a rail carrier and no such carrier shall accept for transportation or transport any shipment of overseas freight to or within any port area for storage or delivery to an ocean carrier without a special permit therefor: *Provided*, That the foregoing provisions of this section shall not apply to any shipment:

(a) Covered by a general permit;

(b) Of grain in bulk, soybeans, flaxseed, or malt moving to an elevator located in any such area when the rail carrier has ascertained upon prior inquiry that adequate storage or handling facilities will be available at such elevator upon the arrival of such shipment;

(c) Of petroleum or petroleum products in bulk, in a tank car or cars, to be unloaded therefrom before overseas movement;

(d) Of livestock, other live animals, or live poultry;

(e) Of overseas freight consigned to the United States Army, Navy, Marine Corps, or Coast Guard;

(f) Originating at any point or place within a port area and moving to shipside therein.

§ 502.203 *Special permits; issuance; review; special permit agents.* (a) Any person desiring a special permit required by § 502.202 may make application therefor informally, orally or in writing, directed to the nearest Special Permit Agent of the Office of Defense Transportation in the manner provided in Administrative Order ODT 32 (11 F. R. 177A–633). A special permit shall be issued by the agent upon such application if, in his judgment based on relevant facts, the shipment to be covered thereby will not result in or increase congestion of traffic in the destination port area and will not result in undue detention of railroad equipment; otherwise such application shall be disapproved and the permit denied. Any special permit may be revoked, modified, or suspended, by the agent who issued it, for obvious error in its issuance, or upon the occurrence of a change in conditions in the port area involved whereby traffic has or will become congested or cause undue detention of railroad equipment.

(b) All applications for special permits or for renewals or extensions thereof shall be made, determined, and handled in accordance with the provisions of §§ 502.200 to 502.204, inclusive, and said Administrative Order ODT 32. Disapproval of applications and denials and revocations of permits shall be subject to review as provided in said §§ 502.200 to 502.204, inclusive, order. Records of final action by permit agents upon applications for or revocations of permits or renewals or extensions shall be open to reasonable public inspection during office hours at the respective offices of the permit agents.

(c) Every special permit issued under §§ 502.200 to 502.204, inclusive, shall be subject to the applicable provisions of future orders, directives, or instructions issued by the Office of Defense Transportation.

(d) G. C. Randall, Manager, Port Traffic, Association of American Railroads, 30 Vesey Street, New York, New York, is hereby appointed as Special Permit Agent of the Office of Defense Transportation. He may appoint such additional special permit agents at such locations as, in his judgment, may be necessary to carry out the provisions of §§ 502.200 to 502.204, inclusive. The name and office address of each such appointee shall be reported forthwith to the Director of the Office of Defense Transportation for publication in the FEDERAL REGISTER.

§ 502.204 *Communications.* Except as otherwise provided herein with respect to special permits, communications concerning §§ 502.200 to 502.204, inclusive, should refer to "General Order ODT 16C, Revised" and should be addressed to the Office of Defense Transportation, Washington 25, D. C.

This General Order ODT 16C, Revised, shall become effective November 15, 1946.

NOTE: The recording and reporting requirements of this order have been approved by the Bureau of the Budget in accordance with the Federal Reports Act of 1942.

Issued at Washington, D. C., this 5th day of November 1946.

J. M. JOHNSON,
Director,
Office of Defense Transportation.

APPENDIX A

Alabama. Mobile (including Theodore).

California. Los Angeles and Los Angeles Port Area (including the City of Los Angeles, Los Angeles Harbor, and Long Beach, and points located between the City of Los Angeles and Los Angeles Harbor or Long Beach on the direct line of any rail carrier), Port Hueneme, San Diego, San Francisco and San Francisco Bay Area (including Alameda, Benicia, Berkeley, Mare Island, Oakland, Port Chicago, Redwood City, Richmond), and Stockton.

Connecticut. Bridgeport, New Haven, and New London.

Delaware. Wilmington.

Florida. Boca Grande, Fernandina, Jacksonville, Miami, Palm Beach, Panama City, Pensacola, Port Everglades, Port Tampa, and Tampa.

Georgia. Savannah.

Louisiana. Belle Chasse, Braithwaite, Lake Charles, and New Orleans.

Maine. Portland and Searsport.

Maryland. Baltimore.

Massachusetts. Boston.

Mississippi. Gulfport.

New Jersey. Camden, and New York Harbor.

New York. New York Harbor, and Poughkeepsie.

North Carolina. Wilmington.

Oregon. Astoria, Lacoda, Linnton, Portland, and Prescott.

Pennsylvania. Philadelphia (including Artificial Island and Hog Island).

Rhode Island. Davisville-Quonset Point, Portsmouth, and Providence.

South Carolina. Charleston.

Texas. Beaumont, Corpus Christi, Galveston, Houston, Port Arthur, and Texas City.

Virginia. Hampton Roads (including Norfolk, Newport News, Oyster Point, and Portsmouth).

Washington. Aberdeen, Anacortes, Bellingham, Everett, Kalama, Longview, Olympia, Seattle, Tacoma, Tulalip, and Vancouver.

[F. R. Doc. 46–20154; Filed, Nov. 8, 1946; 8:49 a. m.]

PART 502—DIRECTION OF TRAFFIC MOVEMENT

SHIPMENTS OF OVERSEAS FREIGHT AND BULK COAL AND COKE

CROSS REFERENCE: For exceptions to the prohibitions of § 502.202 see Part 522, *infra.*

[Gen. Permit ODT 16C, Rev. 1]

PART 522—DIRECTION OF TRAFFIC MOVEMENT-EXCEPTIONS, EXEMPTIONS, AND PERMITS

SHIPMENT OF OVERSEAS FREIGHT

Pursuant to Title III of the Second War Powers Act, 1942, as amended, Executive Order 8989, as amended, and Executive Order 9729, it is hereby ordered, that:

§ 522.661 *Shipment of overseas freight.* Notwithstanding the prohibition contained in § 502.202 of General Order ODT 16C, Revised, any person may offer to a rail carrier and any such carrier may accept for transportation, or transport, to or within any port area named in Appendix A of General Order ODT 16C, Revised, any carload shipment of overseas freight when consigned to a public warehouse for storage, or in care of a port terminal carrier for carrier storage when in either case prior arrangements have been made for such storage, or when such freight is covered by a bona fide steamship contract or booking with an ocean carrier and the shipping order and all other shipping documents covering the rail transportation of such freight bear a certification by the shipper that such storage arrangements have been made or that a steamship contract or booking has been obtained. Such certification shall show the steamship contract

number, or the name of the vessel on which the shipment has been booked, together with the first date the steamship company will accept such shipment at the port of export, or shall show the name of the storage facility, whichever is applicable: *Provided*, That, the foregoing provisions shall not apply to:

(a) Any shipment of overseas freight loaded in a box car or refrigerator car for movement through the Port of New York, New York, when the overseas destination is any point or place not in Central America, South America, Caribbean Area, South or East Africa, West Africa, Iceland, Sweden, Norway, Newfoundland, the Philippines, Hawaiian Islands, China, Denmark, or the Netherlands;

(b) Any shipment of overseas freight for movement throught the Port of New York, New York, when consigned to or in care of a port terminal carrier for carrier storage, or any shipment of overseas freight consisting of frozen meat, lard, or seed when the consignee is the United States Department of Agriculture, or when such freight is consigned to a public warehouse for storage;

(c) Any shipment of overseas freight when the consignee is the Soviet Government, or any person acting for, or as agent of, such government, and the destination in the continental United States is any port area named in Appendix A of General Order ODT 16C, Revised, other than a port located in the States of California, Oregon, or Washington.

(d) Any shipment of overseas freight, except cotton, for movement through the Ports of Galveston, Texas, Texas City, Texas, or Houston, Texas, when the overseas destination is any point or place not in Central America, South America, or the Caribbean Area.

This General Permit ODT 16C, Revised–1, shall become effective November 15, 1946, and shall supersede General Permit ODT 16C–1 (11 F. R. 1053) as of 12:01 o'clock a. m. November 15, 1946.

(54 Stat. 676; 56 Stat. 177; 58 Stat. 827; 59 Stat. 658; Pub. Law 475, 79th Cong.; 60 Stat. 345; 50 U. S. C. App. 633, 645, 1152; E. O. 8989 Dec. 18, 1941, as amended by E. O. 9389, Oct. 18, 1943; E. O. 9729, May 23, 1946; 6 F. R. 6725, 8 F. R. 14183, 11 F. R. 5641)

Issued at Washington, D. C., this 5th day of November 1946.

J. M. JOHNSON,
Director,
Office of Defense Transportation.

[F. R. Doc. 46–20155; Filed, Nov. 8, 1946; 8:49 a. m.]

[Gen. Permit ODT 16C, Rev. 2]

PART 522—DIRECTION OF TRAFFIC MOVEMENT—EXCEPTIONS, EXEMPTIONS, AND PERMITS

SHIPMENTS OF BULK COAL AND COKE

Pursuant to Title III of the Second War Powers Act, 1942, as amended, Executive Order 8989, as amended, and Executive Order 9729, it is hereby ordered, that:

§ 522.662 *Shipments of bulk coal and coke.* Notwithstanding the prohibition contained in § 502.202 of General Order ODT 16C, Revised:

(a) Any rail carrier may accept for transportation, or transport, any overseas freight consisting of coal or coke in bulk;

(b) Any person may offer for transportation to a rail carrier any overseas freight consisting of coal or coke in bulk when such freight is consigned by or to a Government agency; and

(c) Any person may offer for transportation to a rail carrier any overseas freight consisting of coal or coke in bulk when such freight is commercial freight, providing that the shipper has first obtained the approval of the Solid Fuels Administration as required by Solid Fuels Administration Regulation No. 31 (11 F. R. 7894), or as such regulation may be amended or supplemented.

This General Permit ODT 16C, Revised–2, shall become effective at 12:01 a. m. on November 15, 1946.

(54 Stat. 676; 56 Stat. 177; 58 Stat. 827; 59 Stat. 658; Pub. Law 475, 79th Cong.; 60 Stat. 345; 50 U. S. C. App. 633, 645, 1152; E. O. 8989, Dec. 18, 1941, as amended by E. O. 9389, Oct. 18, 1943; E. O. 9729, May 23, 1946, 6 F. R. 6725, 8 F. R. 14183, 11 F. R. 5641)

Issued at Washington, D. C., this 5th day of November 1946.

J. M. JOHNSON,
Director,
Office of Defense Transportation.

[F. R. Doc. 46–20156; Filed, Nov. 8, 1946; 8:48 a. m.]

Notices

CIVIL AERONAUTICS BOARD.

[Docket No. 2005]

ARIZONA AIRWAYS, INC., AND TRANSCONTINENTAL & WESTERN AIR, INC.

NOTICE OF ORAL ARGUMENT

In the matter of the application of Arizona Airways, Inc., and Transcontinental & Western Air, Inc., for approval (a) of an agreement dated July 11, 1945, between said applicants and (b) of the acquisition by Arizona Airways, Inc., from Transcontinental & Western Air, Inc., of route No. 38, under sections 408 (b) and 401 (i) of the Civil Aeronautics Act of 1938, as amended.

Notice is hereby given, pursuant to the Civil Aeronautics Act of 1938, as amended, particularly sections 401, 408, and 1001 of said act, that oral argument in the above-entitled proceeding is assigned to be heard November 20, 1946, 10 a. m., eastern standard time, in Room 5042 Commerce Bldg., Washington, D. C., before the Board.

Dated Washington, D. C., November 5, 1946.

By the Civil Aeronautics Board.

[SEAL] M. C. MULLIGAN,
Secretary.

[F. R. Doc. 46–20119; Filed, Nov. 8, 1946; 8:55 a. m.]

CIVILIAN PRODUCTION ADMINISTRATION.

[C–450]

EXCEL BATTERY & EQUIPMENT CO.

CONSENT ORDER

Sol Lazar, doing business as Excel Battery and Equipment Company, 1446 South Wabash Avenue, Chicago, Illinois, is engaged in the business of manufacturing storage batteries of the automotive SLI type and of component parts therefor furnished as such to others. His quota for the third quarter of 1946 are 41,701 pounds of lead (including battery lead oxide) for the manufacture of such batteries and 20,855 pounds of lead (including battery lead oxide) for the manufacture of such component parts. During the four quarters of 1945 and the first quarter of 1946, he used or caused to be used in the manufacture of such batteries and component parts lead in excess of his quota established by General Preference Order M–38. Sol Lazar has admitted such excess usage and consented to the issuance of this order.

Wherefore, upon the agreement and consent of Sol Lazar, doing business as Excel Battery and Equipment Company, the Regional Compliance Director and the Regional Attorney and upon approval of the Compliance Commissioner, *It is hereby ordered*, That:

(a) During the fourth quarter of 1946 and each of the first, second and third quarters of 1947, Sol Lazar, doing business as Excel Battery and Equipment Company, shall use in the manufacture of automotive SLI type replacement batteries, 10,425 pounds of lead less than he would otherwise be entitled to use in each of these quarters under the provisions of General Preference Order M–38.

(b) During the fourth quarter of 1946 and the first, second and third quarters of 1947, Sol Lazar, doing business as Excel Battery and Equipment Company, shall use in the manufacture of component parts of storage batteries, automotive SLI type furnished as such to others, 5,212 pounds of lead less than he would otherwise be entitled to use in each of these quarters under the provisions of General Preference Order M–38.

(c) Nothing contained in this order shall be deemed to relieve Sol Lazar, doing business as Excel Battery and Equipment Company, from any other order or regulation of the Civilian Production Administration except insofar as the same may be inconsistent with the provisions hereof.

(d) The restrictions and prohibitions contained herein shall apply to Sol Lazar, doing business as Excel Battery and Equipment Company, or under any other name, his successors and assigns or persons acting on their behalf. Prohibitions against the taking of any action include the taking indirectly as well as directly of any such action.

Issued this 7th day of November 1946.

CIVILIAN PRODUCTION ADMINISTRATION,
By J. JOSEPH WHELAN,
Recording Secretary.

[F. R. Doc. 46-20175; Filed, Nov. 7, 1946; 4:24 p. m.]

FEDERAL POWER COMMISSION.

[Docket No. G-606]

TENNESSEE GAS AND TRANSMISSION CO. AND CHICAGO CORP.

ORDER FIXING DATE OF HEARING

NOVEMBER 5, 1946.

It appearing to the Commission that:

(a) By order of the Commission entered December 15, 1944, an investigation was instituted for the purpose of enabling the Commission:

(A) To determine whether The Chicago Corporation is a natural-gas company within the meaning of the Natural Gas Act;

(B) To determine with respect to Tennessee Gas and Transmission Company and The Chicago Corporation (if found to be a natural-gas company) whether, in connection with any transportation or sale of natural gas, subject to the jurisdiction of the Commission, any rates, charges, or classifications demanded, observed, charged, or collected, or any rules, regulations, practices or contracts affecting such rates, charges, or classifications are unjust, unreasonable, unduly discriminatory or preferential;

And the said order of December 15, 1944, *Provided, further,* That:

(C) If the Commission, after a hearing has been had, shall find with respect to the Tennessee Gas and Transmission Company and The Chicago Corporation (if found to be a natural-gas company) that any of their rates, charges, classifications, rules, regulations, practices, or contracts, subject to the jurisdiction of the Commission, are unjust, unreasonable, unduly discriminatory, or preferential, to determine and fix by order or orders just and reasonable rates, charges, classifications, rules, regulations, practices, or contracts to be thereafter observed and in force.

(b) The investigation conducted by the Commission's staff pursuant to the aforementioned order with respect to the matters set forth in paragraph (a) (B) hereof, insofar as such matters relate to Tennessee Gas and Transmission Company, has now been substantially completed and discloses conditions, facts and circumstances which warrant a public hearing with respect to such matters.

The Commission orders that:

(1) A public hearing be held commencing on January 20, 1947, at 10:00 a. m. (e. s. t.) in the Hearing Room of the Federal Power Commission, 1800 Pennsylvania Avenue, N. W., Washington, D. C., with respect to the matters set forth in paragraphs (a) (B) and (a) (C) hereof, insofar as such matters relate to Tennessee Gas and Transmission Company.

(2) This order is without prejudice to the investigation instituted by the Commission's order of December 15, 1944, with respect to the matters set forth in paragraphs (a) (A), (B) and (C) hereof, insofar as such matters relate to The Chicago Corporation.

(3) Interested State commissions may participate as provided by Rule 8 and 37 (f) (18 CFR 1.8 and 1.37 (f)) of the Commission's rules of practice and procedure.

Date of issuance: November 6, 1946.

By the Commission.

[SEAL] LEON M. FUQUAY,
Secretary.

[F. R. Doc. 46-20158; Filed, Nov. 8, 1946; 8:55 a. m.]

[Docket No. G-802]

HOPE NATURAL GAS CO.

NOTICE OF APPLICATION

NOVEMBER 5, 1946.

Notice is hereby given that on October 29, 1946 Hope Natural Gas Company (Applicant), a West Virginia corporation having its principal place of business at Clarksburg, West Virginia, filed an application with the Federal Power Commission pursuant to section 7 (b) of the Natural Gas Act, requesting permission and approval to abandon and remove certain facilities subject to the jurisdiction of the Federal Power Commission, described in the application as follows:

A portion of its transmission pipe line known as Line H-210 from Ellenboro to Dry Fork, West Virginia, consisting of 25.35 miles of 12-inch together with Dresser couplings and gate valves.

In the application it is stated that the facilities which applicant proposes to abandon and remove have carried very little gas since the cancelation of the gas sales contract between Applicant and The Ohio Fuel Gas Company in December 1941; that Applicant has a parallel 16-inch line known as line H-206 and H-227, extending from Kennedy Compressor Station to the Ohio River near Boaz, West Virginia, which lines can and will absorb the quantities of gas now being transported through line H-210 and by reason thereof the proposed abandonment of the portion of line H-210 will not affect service now being rendered.

In the application it is stated further that Applicant has urgent need for the pipe from this pipe line to be used in other parts of its system for replacement projects.

Applicant estimates the cost of abandoning this portion of the line to be approximately $100,000; that the gross book cost of the portion of the line to be removed as recorded on Applicant's books amounts to $244,071.40; that the estimated net retirement loss to be charged to depreciation reserve is $184,614.53.

Any interested State commission is requested to notify the Federal Power Commission whether the application should be considered under the cooperative provisions of the Commission's rules of practice and procedure, and, if so, to advise the Federal Power Commission as to the nature of its interest in the matter and whether it desires a conference, the creation of a board, or a joint or concurrent hearing, together with the reasons for such request.

Any person desiring to be heard or to make any protest with reference to the application of Hope Natural Gas Company should file with the Federal Power Commission, Washington 25, D. C., not later than 15 days from the date of publication of this notice in the FEDERAL REGISTER, a petition or protest in accordance with the Commission's rules of practice and procedure.

[SEAL] LEON M. FUQUAY,
Secretary.

[F. R. Doc. 46-20157; Filed, Nov. 8, 1946; 8:55 a. m.]

INTERSTATE COMMERCE COMMISSION.

[S. O. 633-A]

UNLOADING OF CARS AT BUFFALO, N. Y.

At a session of the Interstate Commerce Commission, Division 3, held at its office in Washington, D. C., on the 5th day of November A. D. 1946,

Upon further consideration of Service Order No. 633 (11 F. R. 12884), and good cause appearing therefore: it is ordered, that:

(a) Service Order No. 633, *cars at Buffalo, N. Y., on P. R. R., be unloaded,* be, and it is hereby, vacated and set aside. (40 Stat. 101, sec. 402, 418; 41 Stat. 476, sec. 4; 54 Stat. 901, 911; 49 U. S. C. 1 (10)-(17), 15 (2))

It is further ordered, that this order shall become effective at 12:01 a. m., November 6, 1946; that a copy of this order and direction be served upon the Association of American Railroads, Car Service Division, as agent of the railroads subscribing to the car service and per diem agreement under the terms of that agreement; and that notice of this order be given to the general public by depositing a copy in the office of the Secretary of the Commission, at Washington, D. C., and by filing it with the Director, Division of the Federal Register.

By the Commission, Division 3.

[SEAL] W. P. BARTEL,
Secretary.

[F. R. Doc. 46-20127; Filed, Nov. 8, 1946; 8:55 a. m.]

[Docket No. 29645]

TRANSCONTINENTAL RATES AND ESTIMATED WEIGHTS ON VEGETABLES

At a general session of the Interstate Commerce Commission, held at its office in Washington, D. C. on the 4th day of November A. D. 1946.

The Commission having under consideration the rates and estimated weights on certain vegetables from Pacific coast territory to the east, and good cause appearing therefor,

It is ordered, That the Commission, upon its own motion, enter upon an investigation into and concerning the lawfulness of the rates, rules, regulations and practices, including the estimated weights per package, for the transportation in carloads of beets, carrots, turnips and lettuce, shipped with or without tops and with or without ice in the containers, as the case may be, from points of origin in Washington, Oregon, California, and other states, as specified in Agent L. E. Kipp's tariffs I. C. C. Nos. 1508 and 1522 and in Trans-Continental Freight Bureau Territorial Directories, I. C. C. Nos. 1516 and 1517, to points of destination generally east of the Rocky Mountains, as specified under groups A to N, inclusive, in the said tariffs and territorial directories, for the purpose of determining whether such rates, rules, regulations and practices, including the estimated weights per package, are or will be unreasonable, unjustly discriminatory, unduly prejudicial or preferential, or otherwise in violation of any of the provisions of the Interstate Commerce Act, and of making such findings and entering such order or orders as may be warranted.

And it is further ordered, That all common carriers by railroad subject to Part I of the Interstate Commerce Act, accordingly as they participate in such traffic, be, and they are hereby, made respondents to this proceeding; and that a copy of this order be served upon each of said respondents; and that notice of this proceeding be given to the public by depositing a copy of this order in the office of the Secretary of the Commission at Washington, D. C., and by filing it with the Director, Division of Federal Register; and that this proceeding be assigned for hearing at such times and places as the Commission may hereafter direct.

By the Commission.

Notice of Proceeding

NOVEMBER 6, 1946.

In *Estimated weights on fruits and vegetables,* 245 I. C. C. 479, and *Western Growers Protective Assn.* v. *Aberdeen & R. R. C.,* 258 I. C. C. 233, the Commission admonished the carriers to make their estimated weights on shipments of fruits and vegetables conform to the average actual weights of the packages.

Failure of the carriers to make adequate progress in this direction impelled the Commission to institute the present investigation.

In the proceeding first above cited it was suggested: That as a practical matter a general revision of the magnitude here proposed is too large and unwieldy effectively to be dealt with as a whole and that a better plan would be to undertake revision of the weights on groups of related products, at one time.

In line with that suggestion the instant proceeding has been limited to cover the transcontinental transportation of only four vegetables, namely, beets, carrots, turnips and lettuce. It is hoped that the principles evolved in dealing with this traffic may serve as a guide in subsequent revisions affecting other vegetables, fruits, and melons.

[SEAL] W. P. BARTEL,
Secretary.

[F. R. Doc. 46-20128; Filed, Nov. 8, 1946; 8:46 a. m.]

OFFICE OF PRICE ADMINISTRATION.

[Order 46 Under 3 (c), Revocation]

NASH-KELVINATOR CORP.

ESTABLISHMENT OF MAXIMUM PRICES

The reasons for the within order are set forth in an opinion, incorporated herein by reference, which accompanies Order 888, under MPR 591 issued concurrently herewith, establishing maximum prices for sales of Nash-Kelvinator and Leonard electric water heaters.

Pursuant to § 1499.3 (e); *It is ordered:*

Order No. 46 under § 1499.3 (c) under General Maximum Price Regulation is hereby revoked.

This order shall become effective November 9, 1946.

Issued this 8th day of November 1946.

PAUL A. PORTER,
Administrator.

[F. R. Doc. 46-20151; Filed, Nov. 8, 1946; 8:53 a. m.]

[MPR 120, Amdt. 54 to Order 1548]

ELLIOT COAL MINING CO. ET AL.

ADJUSTMENT OF MAXIMUM PRICES

For the reasons set forth in an opinion issued simultaneously herewith and in accordance with § 1340.212 (c) of Maximum Price Regulation No. 120; *It is ordered:*

Order No. 1548 under Maximum Price Regulation No. 120 is hereby amended in the following respects.

Paragraph (a) is amended by adding thereto the following name of the producer, address, mine name and index number, and preparation plant name, as follows:

Producer and address	Mine name	Mine index No.	Location and name of preparation plant through which the coals are prepared
*	*	*	* *
Bradford Coal Co., Bigler, Pa.	Aurora No. 5.	3824	Aurora No. 5 Mine Preparation Plant of Bradford Coal Co., at Frenchville, Pa., on N. Y. C.

This Amendment No. 54 to Order No. 1548 under Maximum Price Regulation No. 120 shall become effective November 9, 1946.

Issued this 8th day of November 1946.

PAUL A. PORTER,
Administrator.

Opinion Accompanying Amendment 54 to Order 1548

Bradford Coal Company, Bigler, Pennsylvania, filed an application pursuant to § 1340.212 (c) of Maximum Price Regulation No. 120, requesting that its maximum price for strip-mined coal, produced at its Aurora No. 5 mine, Mine Index No. 3824 and prepared at its preparation plant at Frenchville, Pennsylvania, in District No. 1, be increased 50 cents per net ton.

It appears that applicant's strip-mined coal receives thorough cleaning and hand-picking at the said preparation plant, and that it is such that it can be prepared to a standard of general acceptability in the coal-consuming market.

The applicant qualifies, therefore, for the requested relief under the provisions of said § 1340.212 (c). All mines of District No. 1, qualifying for an increase of 50 cents per net ton for prepared strip-mined coal under the provisions of § 1340.212 (c) of Maximum Price Regulation No. 120, have been grouped together by Order No. 1548, as amended, under Maximum Price Regulation No. 120. Accordingly, this order is being further amended to include applicant's strip-mined coal.

[F. R. Doc. 46-20150; Filed, Nov. 8, 1946; 8:53 a. m.]

[MPR 392, Order 116]

G. S. STODDARD AND CO., INC.

AUTHORIZATION OF MAXIMUM PRICES

For the reasons set forth in an opinion issued simultaneously herewith, and filed with the Division of the Federal Register and pursuant to section 23 of Maximum Price Regulation 392; *It is ordered:*

(a) Maximum prices for sales of all products sold by G. S. Stoddard and Company, Inc., 121 East 24th Street, New York, N. Y., having an established maximum price immediately prior to the issuance of this order, shall be increased by 7½ percent.

(b) Maximum prices for resellers of products supplied by this company shall be the reseller's current cost of acquisition of such products and the percentage markup he had in effect on sales of such products on March 31, 1946, to the same class of purchasers.

(c) The selling prices adjusted by this order are subject to the same freight and trade practices as prevailed immediately prior to the issuance of this order.

This order shall become effective November 9, 1946.

Issued this 8th day of November 1946.

PAUL A. PORTER,
Administrator.

Opinion Accompanying Order 116 Under Section 23 of Maximum Price Regulation 392

G. S. Stoddard and Company Inc., 121 East 24th Street, New York, N. Y. has applied for an adjustment in the maximum prices for sales of all products manufactured by it.

It appears that the operating expenses involved in the production of these products have increased so substantially that the manufacturer is no

longer able to produce and sell the same at current maximum prices. It also appears that the current earnings position of the manufacturer is unfavorable and that loss of its production would force its customers to resort to higher priced sources of supply.

The adjusted maximum prices, representing a 7½ percent increase, are the equivalent of total costs plus an adequate margin of profit and are in conformity to the limitations of section 23 of Maximum Price Regulation 392.

The accompanying order also establishes maximum prices for resellers to reflect such reseller's current cost of acquisition of such products plus the percentage mark-up the reseller had in effect in March 31, 1946, to the same class of purchasers.

In view of the foregoing, the Administrator finds that the accompanying order is in accord and will effectuate the purposes of the Emergency Price Control Act of 1942, as amended, and the Executive orders of the President.

[F. R. Doc. 46-20149; Filed, Nov. 8, 1946; 8:53 a. m.]

[MPR 478, Order 215]

CANNON MILLS CO.

AUTHORIZATION OF MAXIMUM PRICES

Correction

In Federal Register Document 46-19673 appearing on page 12886 of the issue for Thursday, October 31, 1946, the first line of the second item in the table should read "60'' 40 x 24 1.40 osnaburg, dyed, coat-".

[MPR 591, Order 889]

BUDCO, INC.

AUTHORIZATION OF MAXIMUM PRICES

Budco, Incorporated, has applied for authorization of maximum prices for sales at all levels of distribution of gas conversion burners produced by it. It appears that authorization of maximum prices under section 9 of Maximum Price Regulation No. 591 is appropriate. An analysis of the information submitted indicated that the maximum prices requested were not in line with the maximum prices of competitive manufacturers for comparable commodities and had to be revised. The maximum prices established by this order for the manufacturer are in line with competitors' prices for similar articles and are therefore in line with the general level of prices established by the regulation. The maximum prices established for resellers allow such resellers mark-ups normally obtained in the industry, and are in line with the general levels of maximum resale prices for similar articles.

In order to insure compliance with the maximum prices, this order also provides that resellers other than retailers be notified of the maximum prices and that each article be ticketed with the maximum retail price.

After due consideration of the foregoing and pursuant to section 9 of Maximum Price Regulation No. 591; *It is ordered:*

(a) The maximum net prices, f. o. b. point of shipment, for sales by any person of the following gas conversion burners manufactured by Budco, Incorporated and as described in its application dated August 27, 1946, shall be:

List price uninstalled	$130.00
For Budco Model No. 8	

(b) On sales to the following classes of trade f. o. b. sellers' place of business the maximum net prices in (a) above are subject to the following discounts:

	Percent
Distributors' discount	33⅓
Dealers' discount	23
Consumers'	Net prices

Plus quantity discounts as follows: 50 to 90 Burners an extra 5 percent discount; 100 to 199 Burners an extra 7½ percent discount; 200 or more Burners an extra 10 percent discount (quantity discounts are not cumulative).

(c) The maximum prices established by this order are subject to such further cash discounts, transportation allowances and price differentials at least as favorable as those which each seller extended or rendered or would have extended or rendered during March 1942, on sales of commodities in the same general category.

(d) The maximum prices on an installed basis of the comodities covered by this order shall be determined in accordance with Revised Maximum Price Regulation No. 251.

(e) Except on sales to consumers, any seller affected by this order shall give written notice to each of his purchasers of the maximum resale prices established by this order for such purchasers. Such notice shall be given at or before the issuance of the first invoice after the effective date of this order.

(f) Budco, Incorporated shall stencil or tag the gas conversion burner covered by this order, substantially as follows:

OPA Maximum Retail Price Uninstalled—$130.00

Plus transportation charges as provided in Order No. 889 under Section 9 of Maximum Price Regulation No. 591.

(g) This order may be revoked or amended by the Price Administrator at any time.

This order shall become effective November 8, 1946.

Issued this 8th day of November 1946.

PAUL A. PORTER,
Administrator.

[F. R. Doc. 46-20148; Filed, Nov. 8, 1946; 8:52 a. m.]

[MPR 591, Order 890]

A. O. SMITH CORP.

AUTHORIZATION OF MAXIMUM PRICES

For the reasons set forth in an opinion issued simultaneously herewith and filed with the Division of the Federal Register and pursuant to section 13 of Maximum Price Regulation No. 591; *It is ordered:*

(a) The maximum prices, f. o. b. point of shipment, excluding Federal Excise Tax for sales by any person to consumers of the following water heaters manufactured by A. O. Smith Corporation of Milwaukee, Wisconsin and as described in its application dated September 18, 1946, shall be:

(1) *Smithway electric water heaters.*

Model No.:	On sales to consumers
PE-30-ES	$121.22
PE-30-ED	127.80
PE-50-ES	147.58
PE-50-ED	154.16
PE-80-ES	191.06
PE-80-ED	200.28
DE-30-GS	96.38
DE-30-GD	103.62
DE-50-GS	113.78
DE-50-GD	121.02
DE-80-GS	152.18
DE-80-GD	162.32

(2) *Smithway gas-fired water heaters.*

Model No.:	On sales to consumers
MG-20-G	$66.86
MG-30-G	81.10
DG-20-G	84.54
DG-30-G	101.20
DG-45-G	137.18
DG-50-G	166.42
DG-75-G	222.66
PG-20-E	97.82
PG-30-E	114.70
PG-45-E	156.30
PG-60-E	215.90
PG-75-E	272.12

Add $5.00 to list price for MG Models equipped for L. P. gas.

(3) *Special equipment.*

Temperature and pressure relief valve	$2.90
2'' clean out zinc lined tank	3.30
Glass lined tank	6.50
Temperature gas shut off	7.60

(b) (1) The maximum prices specified for sales of gas fired water heaters in (a) above shall be subject to the following discounts on sales to:

	Percent
Plumbing and heating contractors	25
Smithway dealers the following quantity discounts:	
1–5 units	33⅓
6–23	33⅓ and 5
24 and over	40

(2) The maximum prices specified for sales of electric water heaters in (a) above shall be subject to the following discount on sales to Smithway dealers:

	Percent
1–4 units	33⅓
5 and over	40

(c) All gas water heaters are to be sold f. o. b. Milwaukee, Wisconsin, or Kankakee, Illinois, with actual freight allowed not to exceed $1.00 c. w. t. Electric water heaters are to be sold f. o. b. Milwaukee, Wisconsin, or Kankakee, Illinois, with no freight allowed.

(d) The maximum prices established by this order are subject to such further cash discounts, transportation allowances and price differentials at least as favorable as those which each seller extended or rendered or would have extended or rendered during March 1942, on sales of commodities in the same general category.

(e) The maximum prices on an installed basis of the commodities covered

by this order shall be determined in accordance with Revised Maximum Price Regulation No. 251.

(f) Each seller covered by this order, except on sales to a consumer, shall notify each of his purchasers, in writing, at or before the issuance of the first invoice after the effective date of this order, of the maximum prices established for purchasers upon resale.

(g) A. O. Smith Corporation of Milwaukee, Wisconsin shall attach to each water heater covered by this order, a tag containing the following:

OPA Maximum Retail Price not Installed, Including Actual Federal Excise Tax Paid at Source—$_____.
Do Not Detach

(h) This order may be revoked or amended by the Price Administrator at any time.

This order shall become effective November 9, 1946.

Issued this 8th day of November 1946.

PAUL A. PORTER,
Administrator.

Opinion Accompanying Order 890 Under Section 13 of Maximum Price Regulation 591

The accompanying Order No. 890 under section 13 of Maximum Price Regulation No. 591 establishes maximum prices for sales at dealer, plumbing and heating contractor and consumer levels of distribution for gas fired water heaters, manufactured by the A. O. Smith Corporation of Milwaukee, Wisconsin.

These particular commodities already have a 1941 price for sales to utilities. Consequently, maximum prices for sales to other classes of trade must be approved pursuant to the provisions of section 13 of Maximum Price Regulation No. 591.

An analysis of the information submitted, indicated that the prices requested are in line with the prices of competitive manufacturers for comparable commodities and, therefore, are in line with the level of prices established under Maximum Price Regulation No. 591.

The accompanying order establishes prices for dealer, plumbing and heating contractor and consumer levels of distribution. Maximum prices established for resellers reflect the usual margins of such resellers on sales of comparable products.

The order provides that to each water heater a tag on which will be printed the article's maximum consumer price. In addition, each seller, except on sales to consumers, is required to notify each of his purchasers of his maximum prices as well as purchasers' maximum prices on resale.

[F. R. Doc. 46-20152; Filed, Nov. 8, 1946; 8:53 a. m.]

[MPR 592, Order 178]

ALEXANDER BURKE'S SONS

ADJUSTMENT OF MAXIMUM PRICES

Order No. 178 under section 16 of Maximum Price Regulation 592. Specified construction materials and refractories. Alexander Burke's Sons; (Docket No. 6122-592.16-457.

For the reasons set forth in an opinion issued simultaneously herewith and pursuant to section 16 of Maximum Price Regulation No. 592, *It is ordered:*

(a) The maximum net prices for sales by Alexander Burke's Sons, Cicero, Illinois, of clay building brick, to its various classes of purchasers may be increased by an amount not in excess of $1.50 per thousand, for standard size brick equivalents.

(b) If Alexander Burke's Sons, Cicero, Illinois, had an established differential in price during the month of March 1942 for nonstandard sizes of brick, it may convert the adjustment granted herein for standard size brick on the basis of the conversion factors or formulae in use by it during March 1942 in establishing price differentials between standard size brick and the other sizes.

(c) Any person purchasing any of the products, covered by this order, produced by Alexander Burke's Sons, Cicero, Illinois, at the adjusted prices permitted in (a), above, for the purpose of resale in the same form may increase his presently established maximum prices by adding the percentage increase in cost actually resulting to him from the increase permitted the manufacturer in (a), above. Notwithstanding the provisions of this paragraph, in any area where specific maximum prices are fixed by an area pricing order such specific maximum prices shall apply in that area.

(d) All requests of the application not granted herein are denied.

(e) This order may be amended or revoked by the Price Administrator at any time.

This Order No. 178 shall become effective November 9, 1946.

Issued this 8th day of November 1946.

PAUL A. PORTER,
Administrator.

Opinion Accompanying Order 178 Under Section 16 of Maximum Price Regulation 592

The Alexander Burke's Sons, Cicero, Illinois, has applied for an adjustment in its maximum selling prices for clay building brick which it produces. This application is based upon increased labor costs resulting from putting into effect certain wage and salary increases approved in accordance with Executive Order No. 9697. This application has been processed under section 16 of Maximum Price Regulation 592.

The facts in this case indicate that the applicant has met the eligibility requirements set forth under section 16 of Maximum Price Regulation 592. The latter section provides for various adjustments depending upon the applicant's current over-all profitability. The Administrator, in the interest of expedient action based upon wage price applications, has completed studies of this industry generally, and is, in the instance of this and other similar applications, applying to individual applications determinations which generally accord with the tests set forth in section 16, and which are in conformance with Office policy. The adjustment granted in the accompanying order will compensate the applicant only for that portion of the approved wage or salary increase which it appears the applicant cannot absorb out of the adjustment permitted the clay brick and tile industry under section 2.1 (k) of Order No. 1 under Maximum Price Regulation 592, issued September 18, 1945. Should the applicant have factors other than those considered in this action which warrant further adjustment of maximum prices, he may apply for adjustment based on such other factors.

Resellers (except in areas where specific maximum prices are established by area orders) are permitted to increase their existing maximum prices by the percentage increase in cost actually resulting to them from the increase granted the manufacturer. Thus, these resellers will continue to realize the same percentage margin. The accompanying order does not, however, permit resellers to increase their maximum prices where such prices are established by area pricing orders. In the latter case appropriate adjustments of such orders will be made where necessary.

PAUL A. PORTER,
Administrator.

[F. R. Doc. 46-20153; Filed, Nov. 8, 1946; 8:54 a. m.]

SECURITIES AND EXCHANGE COMMISSION.

[File No. 1-664]

STANDARD SILVER-LEAD MINING CO.

NOTICE AND ORDER OF HEARING ON APPLICATION TO STRIKE FROM LISTING AND REGISTRATION

At a regular session of the Securities and Exchange Commission, held at its office in the City of Philadelphia, Pa., on the 5th day of November A. D. 1946.

The New York Curb Exchange, pursuant to section 12 (d) of the Securities Exchange Act of 1934 and Rule X-12D2-1 (b) promulgated thereunder, has made application to strike from listing and registration the Common Stock, $1.00 Par Value, of Standard Silver-Lead Mining Company. The application alleges (1) that this security originally was listed on this exchange on March 30, 1911; (2) that the Snowshoe Mine is the mine that has been operated most recently by the issuer; (3) that operations at this mine were suspended in October 1945; (4) that for the years 1938 to 1944 inclusive the financial statements of this issuer showed a net loss; (5) that a loss of approximately $10,000 has been indicated for 1945 operations; (6) that the financial condition, operating results, and future prospects of the issuer of this security are such that they do not warrant a continuation of the listing and registration of the security on the New York Curb Exchange; and (7) that the rules of the New York Curb

Exchange with respect to the striking of a security from listing and registration have been complied with.

The Commission deems it necessary for the protection of investors that a hearing be held in this matter to afford interested persons an opportunity to be heard with respect to the allegations in the application and the terms, if any, which should be imposed for the protection of investors in granting the application.

Therefore, *It is ordered*, That the matter be set down for hearing before Robert P. Reeder at 11:00 a. m. on Wednesday, December 11, 1946, at the office of the Securities and Exchange Commission, 120 Broadway, New York, New York. The officer so designated is hereby authorized to exercise all powers granted to the Commission under section 21 (b) of the said act and to a hearing officer under the Commission's rules of practice.

It is further ordered, That any person having a bona fide interest in the proceeding may present his views by appearing at the hearing or writing the Commission with respect to the terms, if any, which should be imposed for the protection of investors in granting the application: *Provided*, That any person who intends to enter a formal appearance as a party and to request the imposition of substantive terms upon the granting of the application or otherwise to oppose the relief sought in the application shall notify the Commission and the applicant of his intention prior to the date of hearing.

By the Commission.

[SEAL] ORVAL L. DUBOIS,
Secretary.

[F. R. Doc. 46-20121; Filed, Nov. 8, 1946; 8:56 a. m.]

[File No. 68-79]

STANDARD GAS AND ELECTRIC CO.

NOTICE REGARDING FILING

At a regular session of the Securities and Exchange Commission held at its office in the City of Philadelphia, Pa., on the 5th day of November 1946.

Notice is hereby given that a declaration has been filed with the Commission pursuant to Rule U-65 of the Public Utility Holding Company Act of 1935 by Standard Gas and Electric Company, a registered holding company, for an order permitting such declaration to become effective; and

Notice is further given that any interested person may not later than November 12, 1946, at 5:30 p. m., e. s. t., request the Commission in writing that a hearing be held on such matter stating the reasons for such request, the nature of his interest and the issues of fact or law raised by said declaration which he desires to controvert or may request that he be notified if the Commission should order a hearing thereon; any such request should be addressed: Secretary of the Securities and Exchange Commission, 18th and Locust Streets, Philadelphia 3, Pennsylvania. At any time after November 12, 1946, said declaration as filed or as amended may be permitted to become effective as provided in Rule U-23 of the rules and regulations promulgated under the act or the Commission may exempt such transactions as provided in Rules U-20 (a) and U-100 thereof.

All interested persons are referred to such declaration which is on file at the office of this Commission for a statement of the transactions therein proposed which are summarized as follows:

Standard Gas and Electric Company proposes to send, to the holders of its Prior Preference Stock, $4 Cumulative Preferred Stock and Common Stock, a letter, a notice of annual meeting of stockholders, a proxy statement and a proxy in connection with the election of directors of the Company now scheduled for December 4, 1946. Standard Gas and Electric Company also proposes to send to certain brokers a letter and a reply card to be used by such brokers in requesting proxy solicitation material to be supplied to the clients of such brokers. Copies of the proposed letters, notices, reply cards, proxy statement and proxy, together with a statement of the manner in which the solicitation is proposed to be made, are set forth in the declaration. Standard Gas and Electric Company proposes to engage the services of Georgeson & Co., 52 Wall Street, New York, New York, to assist the Company in the proposed solicitation of proxies for the election of directors of Standard Gas and Electric Company. The cost of the proposed solicitation is estimated to be $21,000, which total cost includes a fee of $3,500 and an estimated amount of expenses of $5,000 to be paid to Georgeson & Co. for its services.

Standard Gas and Electric Company states it has received no information as to any opposition which has arisen or may arise with respect to the subject matter of the solicitation mentioned in its declaration. Standard Gas and Electric Company has requested that the Commission accelerate the declaration so as to permit the commencement of the solicitation as soon as possible.

By the Commission.

[SEAL] ORVAL L. DUBOIS,
Secretary.

[F. R. Doc. 46-20120; Filed, Nov. 8, 1946; 8:45 a. m.]